The Canadian Medical Association Journal

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CANADIAN MEDICAL ASSOCIATION, ONTARIO MEDICAL ASSOCIATION AND CANADIAN SOCIETY OF ANAESTHETISTS

CONJOINED ANNUAL MEETING

Monday and Tuesday, June 16th and 17th—Business meetings of Canadian Medical Association and Ontario Medical Association.

Tuesday Evening 7 P.M.—Round table dinner and discussion.

Wednesday, June 18th—

9.30 A.M. to 12.30 P.M.—sectional meetings.

12.30 to 2.00 P.M.—luncheon.

2.00 to 4.30 P.M.—Sir John Thompson Walker, of London, England.

Dr. Chevalier Jackson, Philadelphia, Pa.

Chairman, General Committee.

8 P.M.—Introductory Addresses, Dr. I. G. Smith, Chairman, General Committee.

Formal Introductions—Dr. J. F. Argue, Pres., O.M.A.

Dr. J. Franklyn Kidd, C.M.G., Pres. C.M.A., Chairman of meeting.

Reception of visiting practitioners—Listerian address; Dr. John Stewart, Halifax, N.S.

Thursday, June 19th—

9.00 to 11.00 A.M.—sectional meeting.

11.00 to 12.30 A.M.—Dr. Elliott P. Joslin, Boston.

12.30 to 2.00 P.M.—Luncheon and meeting Canadian Medical Protective Association.

2.00 to 4.30 P.M.—Dr. John Parkinson, London, England.

Dr. Polak of New York, U.S.A.

8.00 P.M. Annual Dinner and class dinners.

Friday, June 20th—

9.00 to 12.30 A.M. Tuberculosis.

Dr. Hugh Cummins, Cardiff, Wales.

Dr. E. Archibald, Montreal.

Dr. Parfitt.

12.30 to 2.00 P.M.—Luncheon.

CANADIAN SOCIETY OF ANAESTHETISTS

FOURTH ANNUAL MEETING

Preliminary Programme

Professor Macleod—Toronto University.
The Chemical Control of Respiration.

Professor Lloyd—McGill University.
Further Studies in the Theory of Narcosis.

Professor Hendrys—Toronto University.
Colonic Absorption of Ether as an Anaesthetic in Labour.

Dr. Norman Gwyn—Toronto.
Chest Complications in Surgery.

Dr. Wm. Webster—Winnipeg.
Title to be announced later.

Dr. Samuel Johnston—Toronto.
The bearing of Basal Metabolism on Anaesthesia.

Dr. Fraser B. Gurd, Montreal.
Anaesthesia for Intra-thoracic Surgery.

Dr. Wesley Bourne—Montreal
Further Studies on Effects of Anaesthetics at Various Environmental Temperatures.

Dr. Chas. Robson—Toronto.
Anaesthesia in Children.

Dr. Easson Brown—Toronto.
Further Studies in Anaesthetic Gases.

Dr. G. M. Geldert—Ottawa.
Nitrous-Oxid Anaesthesia for the Cystoscopy.

Dr. McCaughey—Ottawa.
Nitrous-Oxid Oxygen Analgesia in Cavity Preparation.

There is Dr. Muir's Presidential Address and the address of welcome to add to the above.

NOTICE REGARDING HOTEL ACCOMMODATION

It is confidently believed that, from the point of view of programme and attendance, the conjoint meeting of the Canadian and Ontario Medical Associations which is to be held in Ottawa from June 17th-20th, 1924, will be one of the most outstanding medical conventions ever held in Canada. According to present indications, the attendance will tax the hotel accommodation of Ottawa to the limit. In order that the Committee on Arrangements may make satisfactory arrangements for all who will attend, it is most important that we know just as soon as possible whether or not you intend to be present, the date of your arrival, the number in your party, and the accommodation required. Will you please be good enough to advise Dr. L. M. Dawson, 83 Second Avenue, Ottawa, not later than May 15th.

The local Committee are most desirous of securing adequate and comfortable accommodation for all who attend. May we count upon your co-operation. We can only hope to take care of those who intimate to us that they expect to be present.

Yours very truly,

L. M. DAWSON,

Secretary, Committee on Arrangements.

An Address

ON

SURGEON AND STUDENT*

OSKAR KLOTZ, M.D.

Professor of Pathology, University of Toronto

THE same evidences of unrest which have marked the opening years of four successive centuries, have shown themselves during the first quarter of the twentieth century. Man's competitive urge drives him on with increasing impatience until reaching the limits of endurance he falls from exhaustion, either to again reach the levels from which he ascended, or having learned from his experience, he enriches his own and succeeding generations with new thought and an advance in civilization. We are just recovering from such a period of exhaustion, and we are slowly gleaning from the wreckage of man-made misfortune, the lessons for a better future for all races and classes of people. Man's activities travel through cycles, and the completion of one leads only to the beginning of another which repeats in a general way the phases of its antecedents. Let us hope we are on the threshold of the quiescent period, the time which is devoted to constructive policies, both in science and in our social life. Everyone finds for himself a place to be a builder in the destinies of his country and his era.

It is true that the exaggerated ideas for social evolution have followed one another in such rapid succession, that we have been thrown into a delirious confusion from which it is not easy to recover; and furthermore, the many suggestions for advance of our social and economic conditions have been so precocious that the conservative minds dare hardly express themselves for fear of being rated as "back-numbers" and classified with a generation long past.

There is no more appropriate example of the rapid development of modern thought than the outline of the progress of modern medical education. This has been particularly true of medicine in America where, having existed for a century and a half in only a partly organized state, it suddenly realized some of its needs, and within relatively few years an entirely new attitude was assumed by it. The spirit of the Edinburgh school was the first to be transferred to the new world when Doctors Shippen and Morgan laid the foundation of the Philadelphia College of Medicine in 1765, which later became the University of Pennsylvania. A similar influence was implanted in Canada with the opening of the schools at Montreal and Toronto, which subsequently became the medical departments of McGill University and the University of Toronto. The early successes of these schools, founded upon the soundest principles of education and medicine of the time, was followed by a period of faulty development which, with progressive increase of proprietary institutions, arrived at a time when a new beginning had to be made, and many of the defects wiped out. The period of reconstruction began at about the opening of the present century and now when we look back upon the results of a serious attempt to raise the status of the medical school, we find a great wreckage, amidst which has grown up a healthy group of institutions, some new and some old, with one outstanding change in the majority of the schools, a direct association with a university. The college of medicine has come to be recognized as an integral part of a university organization, in which the trustees and the faculty take a keen combined interest. Very few proprietary schools remain, and the life of a medical school without at least a university affiliation is doomed to a short existence. The radical measures which have reduced the number of medical schools in North America from above two hundred to a total of ninety-six

*Delivered before the American College of Surgeons meeting at Ottawa, on November 23rd,1923.

have all been drafted in the interest of the student of medicine.

The standard of education for admission to medical schools has been materially raised, and is continuously being raised by all schools, even those who were unwilling, at the first, to recognize the value of a liberal education in arts or science as an essential to the study of medicine. Some schools were bold enough, and one of them as early as 1893, to demand a degree in arts supplemented by a training of at least one year in chemistry, physics and biology. These remarkable advances in the demands for adequate preliminary preparation were immediately followed by a re-casting of the medical curriculum itself. The outstanding changes of the early reorganization concerned chiefly the laboratory departments which were allotted more time on the schedule, more adequate facilities for student accommodation, and a better equipment for the student to carry out his own experiments and observations.

It is unnecessary for me to repeat that in a great measure, the quality of the students completing their courses and graduating from a medical school is dependent upon the premedical training and ability when they gain admission to their professional studies. It is by no unusual gift of foresight, that the instructor can pick out the men whose educational opportunities allowed them to study in wider fields and who, because of these attainments, became leaders in their class competitions. To successfully carry through the studies necessary for the fulfilment of a medical training, the student must present himself properly prepared, and once having ventured upon this oft-charted sea of study he must carry on with a bold front and much courage. His is no easy task. The curriculum has become increasingly intricate; new subjects have found a place upon the schedule; the former department of the institutes of medicine has been fragmented into four or five new divisions. There is much danger in carrying these subdivisions too far, and already we hear protests against the intricacies of our educational mosaic. There was a tendency in the final years to offer more and more time to the specialties of the subjects, while the fundamentals of medicine and surgery suffered.

The pendulum of impatience and novelty has swung too far; we are again returning to a more conservative attitude, and we realize that the time at the disposal of the student of medicine is so limited, that he can gain only a knowledge of the fundamentals and an enthusiasm for work and observation. The aim of the undergraduate instruction is to train men in the general science and practice of medicine, equipping them to become sound general practitioners, and laying a foundation upon which such student may, if he so desires upon the completion of his studies or even at a date in the more distant future, enter upon special studies of a post-graduate kind, that he may specialize in a more restricted field of practice. A misunderstanding has repeatedly crept into discussions of the modern medical curriculum, stating that because of an apparently large allotment of time devoted to laboratory subjects, the medical schools are attempting to make scientists out of men intended for general practitioners. Such comments cannot be taken seriously, for none appreciate more clearly the value and place of the general practitioner than the faculties of medical school, who constantly have brought to their attention the needs of men with such training, in all types of communities.

What, however, has all this to do with the surgeon? Why should we emphasize the value and importance of an adequate premedical training? Why dilate upon the strictest needs of medical education and warn against too early specialization in his studies? The practical side of the student's activities take precedent over all other forms of study or instruction, and this is particularly true when, having successfully passed his trials at examination, he now leaves the shelter of his school. Where it is possible to take up a year's practical work in a good hospital, nothing can be more highly recommended, and further, where the urgency to enter practice is not too great, such hospital training may be supplemented by a service in a laboratory. The young man about to enter surgery, (and it is true also in medicine), should not fail to gain a contact with laboratories of bacteriology, pathology and where possible, anatomy. The daily study and minute examination of tissues received from operation and autopsy, will give an information and an insight into the problems of disease, as can be

obtained from no text-book. The learning of the methods for analysis is often useful in the hands of the surgeon, when subsequently he finds himself removed from the facilities of the laboratory and when the clinical diagnosis urgently demands further investigation of the case. The daily round of material which passes through a pathological laboratory gives a familiarity of the commonest lesions arising in human tissues and teaches the observer to avoid looking for the unusual until he has properly ruled out the ordinary. The surgeon who has had his laboratory training, is not the one to come forward with unique diagnoses. There should be a place in every well-equipped laboratory for the members of the clinical departments who wish to work.

It is but a few years ago, that each new generation of surgeons was created by individual instruction when acting as assistant to his chief. Commonly, immediately after his graduation, this assistant became affiliated to a surgeon in his practice, to the exclusion of all other ties in departments of the hospital or a medical school. Such an assistant received a brilliant training in the activities of his preceptor, learning his methods of approach to patient, his procedure in examination, the interpretation of signs and symptoms and the technique of operation. But his training was often sterile in new ideas, and the limited opportunities for contact and discussion from other angles led to the development of a provincial type. We must credit this mode of training of young surgeons with the production of safe and sound men, fitted to cope with the ordinary problems of surgery as they encounter them in general practice.

Whether it is the limited opportunity which comes to the assistant segregated fro professional contact by the inconveniences of country practice, or whether it is the broader range of associations which lie in the path of the young man in a city hospital, the crux of the value of the permanent imprint which is placed upon him rests with his own preparedness and with the qualities of his preceptor. This may be a trite saying, but one which we will do well to remember. In this regard I am reminded of an interesting personality, one Albert Walter, who after several years' training with Sir Astley Cooper, came to America and settled in the frontier districts of the United States. His practice was the usual general practice of the time, but gradually he devoted himself more and more to surgery, as the demands of a growing industrial community offered work in this specialty. The influence of Astley Cooper showed itself, in his not merely following the teachings of this master, but also in his trained observation and individual thinking which made him stand out as a man with new ideas. In 1867, concurrently with the development of Lister's work, Walter published a book on "Conservative Surgery" in which he pleads for the saving of fractured limbs. Prior to this it was held that compound fractures demanded amputation for otherwise the patient's life was endangered by gangrene. Walter advocated cleanliness, free drainage, removal of fragments and proper splinting. His results were remarkable, and because of the simplicity with which he obtained results, he disclaimed the necessity of Lister's antiseptic method,—the report of which he had read in a brief note when he was publishing his own results. Walter was unconsciously carrying on Listerism without appreciating the similarity of the methods. Such constructive results come from the workings of the prepared mind, and are commonly the reflections of the individual master inculcating the spirit of the student and the enthusiasm for work.

To-day, however, private generosity and public endowment are equipping our hospitals for the care of the sick, in such ample and scientific manner, that we cannot admit that the duties of the individual members of the staff are fulfilled when professional attention to the needs of the patients is given. It becomes incumbent upon the staff to give time and effort in the training of both house-surgeons and assistants; to utilize the opportunities of all departments in concluding upon diagnoses; and to co-operate with the laboratory departments to the fullest extent, meeting them in conference and freely discussing the difficulties which may beset the paths of each in different diagnoses. The days of the laboratory lying subservient at the feet of the clinical departments is long past; and most unfortunate it was that such ever existed. That differences in the interpretation of a com-

plexity of facts should at times exist, is but human and this should stimulate the associates to greater effort, in the hope that they too can throw new light upon the intricate problems. One of the most important studies in modern pathology and pathological chemistry is the co-ordinating of their findings with the manifestations which are observed by the clinician. Progress in this direction can be accomplished only by the closest partnership in these studies.

There are many brilliant examples where such teamwork not only served its usefulness in the care of the cases immediately in hand, but also in developing a school of thought for the advance of medical knowledge, as well as serving to instruct the young men of the new generation in advanced scientific medicine and encouraging them to carry on in newer fields.

These are no idle thoughts of the moment. The opportunities for extending the influences for good, lie in the hands of all of us, and particularly those who are associated with large modern hospitals. This association has already done much for the improvement of the physical equipment and organization of the hospitals, and in all parts of Canada and the United States we see the influence of its activities. By these works the public has received direct benefit, and their appreciation is recorded in the liberal offerings to extend the scope and efficiency of hospital practice. In accepting these endowments, we assume a great responsibility to the State, and we must provide for an unbroken line of successors who will be worthy of assuming our burden when the call is made upon them.

In Canada there are very few university hospitals; in the United States the number is rapidly increasing. The majority of the hospitals in both countries are non-university institutions; but this by no means indicates that they are non-teaching institutions. The organization of the personnel of these hospitals has been accomplished with no regard to instruction, but nevertheless every hospital serves in some capacity as an educational institution by offering information to its trustees, its residents, its nurses, its patients and its community upon advances in medical practice and thought, and in demonstrating certain principles of preventive medicine. This type of education is often carried on unconsciously, there being no fixed programme or organized attempt of meeting its audience. Other hospitals, on the other hand, play a much more active rôle, and set themselves the task of giving graduate instruction to not only members and associates within their institution but offer the privileges of the hospital facilities to both lay and professional groups. In many of the towns and smaller cities the hospital is the health centre towards which the people look for guidance in matters of public health. With the better organization of our municipal departments of health these interests are being assumed by them, but there always remains a field for the active participation of the hospital staffs to carry instruction of a high order to those who are situated in a less opportune position.

A large percentage of the medical students receive the bulk of their clinical training in the university hospital, where the demands of time limit their contact with patients in any one of the branches of clinical medicine, and where often the opportunity of continued and repeated examination of the same patient is wanting. The student has every opportunity of learning the technique of examination and comes to appreciate also the need for careful observation and the recording of facts; but the total number of cases which he may follow from the beginning to end can never be large. That experience, of applying his technical knowledge is reserved for him upon graduation and it is here as well as during the final holidays of his undergraduate days that the non-university hospital in all parts of the country, may be of much benefit not only directly to the profession, but also in the adequate service which this profession will continue to render to the public. I am sure, that with a little more effort in this direction, our hospitals can fill a gap which has always been a difficulty separating the recent graduate from the joys of a decent practice.

The ideals of medical practice flit before the student's vision in a truly will-o'-the-wisp fashion; as he enters his undergraduate studies he brings with him the impressions gained in his home surroundings; as he passes onwards, these impressions gradually become obliterated, and are replaced by new ideas of the doctor's life, gained from the instructing

group; when he reaches the final year, he and the majority of his class have given their vows to the small but select group of surgeons. The results in surgery are so clear-cut; he sees that the purpose of the treatment has been gained by such logical procedure,—a therapeusis the like of which is found in no other field of medcine, that he finds no difficulty in arriving at a decision. Fortunately all of these vows are not considered binding, and in their subsequent careers, the opportunities in other fields of medicne present their attractions. None know better the attributes of the good surgeon, than do the members of this distinguished class themselves. To them should fall the duty of discussing with and advising the young candidate. We have all seen the unfortunate failures in one specialty or another by aspirants, who for one reason or another were not equipped for the undertaking. The medical schools of all countries are assisting in this problem as far as they can, and by friendly discussion help the student in determining upon the character of the work for which he is best suited and has an inclination.

With advancing decades our social organization is becoming more complex, and it is with increasing difficulty that each individual is able to see the niche into which he is best fitted to serve. Those whose experience has given them an insight into the workings of the machinery of our modern civilization, should step forward and assume a command in the direction of our coming generation, pointing out the pitfalls and illuminating the roads of easy access, so that we may be assured that the bright flame of the torch of scientific medicine may not be neglected.

ENDEMIC GOITRE

W. D. Keith, M.D.

Vancouver

LIKE all mountainous countries British Columbia is peculiarly liable to the incidence of goitre, and the recognition of its prevalence, and the importance of early treatment is of great practical value, both from a public health and economic point of view. Goitre prevails to quite an extent in the districts about Penticton, Vernon, Armstrong, Enderby, Salmon Arm, Keremeos, the Arrow Lakes, Kamloops, the Carribou, Prince George and all along the Grand Trunk Pacific as far as Edmonton. It is also noticeable even in the lower Fraser Valley, whilst Bella Coola Valley and the Pemberton Valley are peculiarly sensitive to this disease.

For the purpose of this study let us consider the conditions of the thyroid as manifested in human beings and animals in the Pemberton Valley. This valley, about 45-50 miles long, lies in the Coast range 90 miles north of Vancouver. It is watered by the upper Lilloet River which flows from a glacier seen in the distance. The river is about 150-200 feet wide, not very deep and falls about 10 feet to the mile. Its temperature never rises above 43 deg. At the lower end of the valley the Lilloet is joined by the Birkenhead River, a stream of clear water much smaller than the Lilloet.

Situated at the lower end of the valley at the junction of these two rivers is an Indian Reserve, peopled by about 150 Indians whose forebears have lived in the same place as far back as the knowledge of the white man goes. In the Indian village no sanitation has ever been attempted, and amongst these Indians there is no goitre, nor has there ever been a case recorded. Only on rare occasions has a litter of myxoedematous pigs been born on the reserve.

Whilst considering the lack of goitre amongst these Indians I would like to draw attention to the fact that they eat a great deal of salmon. The fish come up the Birkenhead to spawn, and many millions of eggs are secured at the Government Hatchery a mile above the village. The Indians are allowed to use

the spent salmon and annually cure thousands of fish for winter use. Their pigs also eat the dead salmon washed ashore on the gravel banks of the stream. It is quite probable that the Indians and their pigs get enough iodine from the salmon to give their thyroids the necessary quantum of this element.

There is no goitre amongst the people or animals of Pemberton Station on the P.G.E., a point about 4½ miles up the valley. For the next five miles goitre occurs amongst animals and stock but is not a striking manifestation. But from there on the incidence of goitre becomes quite pronounced as you will learn when I give you the observations of Mr. John Ronayne, an Irishman of good old yeomanry stock, who, with his two brothers have farms about 14 miles up the valley, and he tells me the tendency to goitre is even more pronounced a few miles further up above their location.

Up to the end of 1917, Mr. Ronayne and other settlers had suffered such severe losses amongst their stock that they had almost decided to leave the valley. I will give you as clear a picture as I can of conditions as they existed up to that time, as given me by Mr. Ronayne, so that you may realize the serious outlook that presented itself so far as raising stock was concerned.

You probably know that the pig is one of the animals most sensitive to goitre. In the Pemberton Valley pigs arrived in the usual large litters, but were hairless, except for a few hairs about the snout and face. Their shoulders were large and their bodies fat, but none of them lived more than a day. Those with some hair which survived for a few days became hopelessly myxoedematous. In the myxoedematous pigs the thyroid, on examination, was found to be much larger than usual, dark red in colour and engorged with blood.

In regard to cattle: all cows, even if with no apparent goitre, on close inspection had some slight enlargement of the thyroid and gave birth to goitrous calves. Ninety per cent. of the two year old heifers lost their calves within a few days of birth, being too weak to stand. The subsequent calves from these cows would all have goitre, but would remain alive with personal care, which often meant hand feeding in the house. Some of the calves from two year old heifers were cretins—stupid and wrinkly and stiff in the legs. A cow having no apparent goitre would have a calf showing severe goitre at birth. The goitre in the calf would become more apparent till the cow reached her full milk and when the calf started on grass the goitre gradually became less, a little showing in the yearlings and none at two years, though these heifers would be heavier and more wrinkled than normal. Many of the cows, mothers of the goitrous calves, carried their offspring ten months, *i.e.*, a month longer than usual.

Mares after coming into the valley developed goitre, and after being in the district three years their colts were goitrous. The second colts gave some evidences of myxoedema, but lived. These colts instead of the usual eleven months were carried 12 and sometimes 13 months. In all cases where the colts were carried 12 or 13 months they were weak, goitrous, and did not survive. According to Ronayne's observations 85% of the colts died, and of the 15% which survived, it was a noteworthy fact that these were only carried 11 or 11½ months. The goitrous born colts were abnormally big, heavy and fat, and decidedly weak in the legs; in some cases the forelegs were weak and in others the hindlegs. If a colt were able to stand it would live. Occasionally a myxoedematous colt would live several months and then die. The meconium in the colts that died was rubbery in consistency and Ronayne thinks for that reason the colt had not power to expel it. The colts that recovered and grew up, in turn had colts with goitre which died. Goitre in colts or foals was evidenced by weak front or hind legs though they all had plenty of hair. The legs looked strong but showed a tendency to become bowed.

Ronayne made the observations, which many scientists corroborate, that all farm animals were more subject to goitre or exhibited it more in the late winter and early spring months, the fall stock being freer than the spring stock of this condition.

As regards chickens, ducks and, I believe, turkeys as well, all brought into the valley appeared to thrive; but their eggs, though producing embryos, failed to hatch out, the apparent cause being the thickening of the white envelope inside the shell which was so thick and rubbery that apparently the young chick could not break its way through. Oc-

casionally, too, a full grown hen would suddenly drop dead, or a rooster lose his voice. Even now, though rarely, young birds on being killed for the table, will show enlargement of the thyroid.

Confronted then with this grave economic problem, Ronayne applied for advice to the Bureau of Animal Industry at Washington and was referred to Dr. Marine of Cleveland, as the best known authority on the subject. Marine informed him that the cure was very simple, namely the administration of iodine in form of tincture of iodine or potassium iodide to the animals. He suggested five drops a week for horses and cows, 3 for sows and a few drops for chickens. The iodine acted in a miraculous way. All the goitres disappeared from his animals and no further trouble in rearing stock or fowl has occurred, and in October, 1922, when the writer visited the valley he could not find a goitre in an animal or human being.

With regard to human beings and the incidence of goitre in the Pemberton Valley. All the babies born in the district had goitre, and almost every woman coming into the valley would develop goitre in a few months or a year. Bachelors having no cows and using only condensed milk would show goitre even within a few weeks' time, certainly within a few months. Thin people seemed to be less susceptible than fat people.

Acting on Dr. Marine's suggestion, Ronayne gave a cow that previously had four goitrous calves (this cow was born in the valley and had shown no goitre herself) 5 drops of tincture of iodine twice a week beginning the treatment one month before the calf was due. The result was a perfectly healthy and normal calf. After some experience with giving iodine, Ronayne found that very little was necessary in summer and that the most necessary time to give iodine was in winter and early spring. He mixes 50 drops with salt giving this occasionally to the whole herd during the winter months. This entails very little labour, but he found that a weak member of the herd would sometimes get pushed aside and not get its required quota. Mares in foal get 5 drops of the tincture once a week beginning two months before foaling time. Pigs require the least, and if they are getting skimmed milk from cows receiving iodine, no iodine is necessary, Ronayne gives iodine to the chickens only in spring when eggs are being gathered for hatching and then a few times is sufficient, mixed with mash or in the milk. It is only given as a preventive measure as his hens often get skimmed milk. It costs Ronayne for iodine to keep 100 cattle, 12 horses, 30 pigs and 200 chickens free from goitre, and their progeny free also, $2.00 worth of tincture annually.

Any resident of the valley exhibiting a goitre takes a little iodine till it disappears. If the cows are getting iodine and the children and grown ups are drinking milk from these cows it is not necessary for them to take iodine direct. Whilst on the subject of administering iodine be sure to see that your tincture is a good one.

Some observations and experiments of Mr. Ronayne relative to goitre are instructive and certainly of interest. He has never observed an enlarged thyroid in any wild animal killed in the district—deer, bear, squirrels, musk-rat, rabbit, and mink. He found that goitre in all animals tended to recede without treatment in summer and autumn. In fact, any animal born in the fall, was able to live, before the days of iodine administration. This is in conformity with the observations of McCarrison and others, and also with the fact that Kendall found 300 to 500 times less thyroxin in glands taken from animals in the late winter months than in those taken from animals at other times of the year. He found that calves fed on skimmed milk did better than those fed on whole milk; that a calf with goitre had a much more rapid recession of the gland if weaned and fed skimmed milk than if left to suckle. Ronayne put a boar and two sows in a field by themselves for four months in winter; they had no access to the river and only received water from melted snow. The progeny showed signs of goitre.

In order to test out the idea that iodine in excess caused a lack of fecundity in animals, he gave a sow 1 drop of iodine tincture daily during June, July and August. During this time she never came into heat. The iodine was discontinued in September and she came into heat in October. He tried the same treatment on a boar for four months and his testicles atrophied. This latter experiment, though suggestive, Ronayne thought did not prove anything, as

the boar was slightly myxoedematous to start with. He gave ten drops of iodine to a sow he did not wish to breed from for seven days and she did not come round for 3 months.

Ronayne now only gives iodine to his cattle during February and March. After turning them out in the bush in April no more is given.

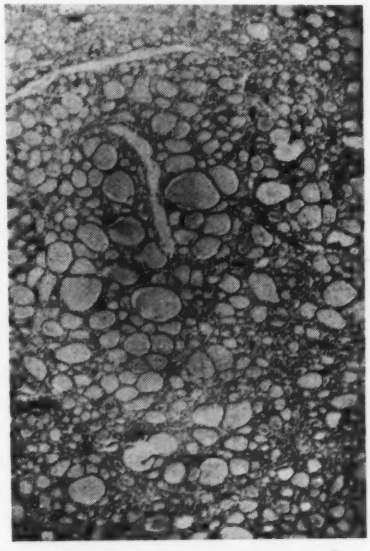

FIG. I.—Thyroid of cow. Died of strangulated hernia. aged 14. Before days of iodine had 3 cretinous calves; after administration of iodine gave birth to several normal calves. Some acini slightly enlarged; lining cells normal; increase of interacinar tissue.

FIG. II.—Goitre—imported mouse (*Mus Linnaeus*). Colloid type with colloid taking stain well in the larger vesicles. Congestion with hyperplasia and slight staining of colloid in some portions of the section.

Calves born with a noticeable goitre in the spring have no trace of it in the fall, even though no iodine is given.

Thinking that probably the river water might hold the contagium which provoked goitre in this district, I brought enough river water

FIG III.—Goitre—imported mouse (*Mus Linnaeus*). Colloid type. Colloid stains well; active congestion with hyperplasia involving a large area of gland.

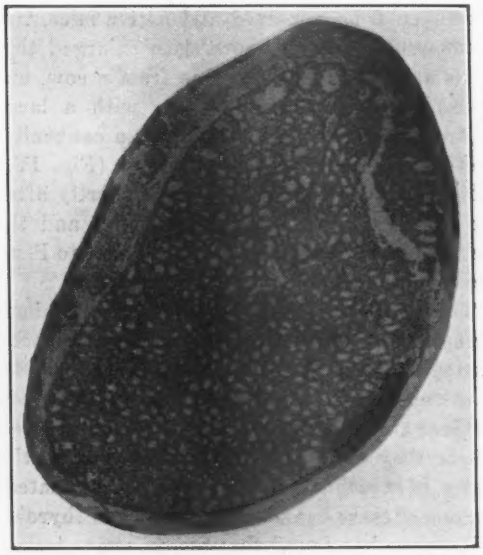

FIG. IV.—Goitre—guinea-pig, died at or shortly after birth. Acutely congested thyroid and parathyroid. Acini lined by large soft cells. Very light staining colloid in the acini and lymph spaces in one area of gland, otherwise no colloid seen. Nuclei of cells are large vesicular—mitotic figures seen in nuclei of parathyroid. Cause of death myxoedema?

down to supply four guinea pigs and three white rats from Oct. 26th, until Dec. 21st, 1922. These animals received bread soaked in this water daily and had no vegetables, though they ate some of the hay used for their bedding. In none of these animals did any discernible enlargement of the thyroid occur, and during the time of the experiment one of the rats had a number of young ones, all of which were healthy and showed no signs of goitre or myxoedema. I also sent four guinea pigs (2 male and 2 female) up to Pemberton on Oct. 31, 1922, and on Jan. 9th, 1923 two females and one male rabbit, to observe how rapidly the thyroid became affected, but in only two of these animals were we able to produce goitre. The difficulty in carrying out any animal experiments is to be sure that no iodine-containing food is given to the animals. We thought that as nitrates had been put on the soil on which the mangels used to feed the animals were grown, that this might have affected our experiment.

Histological Sections

Twenty-nine histological sections have been made from the thyroid glands of various animals in the Pemberton Valley—a musk-rat, seventeen from imported and native mice, two from week-old calves born with enlarged thyroids and killed for veal, one from a cow, one from a seven months old hen with a large goitre, one from a rabbit to show a congenital goitre, and one from a guinea-pig (Fig. IV.) which died, we think, at birth or shortly after from severe myxoedema. The rabbit and the guinea-pig were bred from those I sent to Pemberton last year.

The section from the musk-rat, an animal living under circumstances where a water-borne contagium one would think would be operative, shows normal structure. Amongst the hundreds of these animals trapped by the Ronaynes, even where they were caught alongside ponds, the water of which was very much contaminated, not one of these has shown an enlarged thyroid.

Ronayne has found that one in every ten of the imported mice (*Mus Linnaeus*) shows enlargement of the thyroid, and this only amongst the females. A few of the thyroids from mice show some of the acini decidedly enlarged and filled with well stained colloid, whilst in other portions of the gland a hyperplasia is present. The two sections shown suggest a colloid goitre with a secondary hyperplasia, active or receding, as Marine shows may occur in a colloid type of enlargement. (See Figs. II and III).

The sections from the calves a week old, and a hen 7 months old, show marked hyperplasia with a picture impossible to differentiate from the histological picture associated with exophthalmic goitre.

The section from the cow (Fig. I) is unusual on account of the clinical history. This cow had given birth to three cretinous calves that died at or within a few hours of birth. Then the cow came under the iodine treatment and gave birth to several healthy calves. She died this spring of a strangulated hernia. The structure of this section is not of the colloid type as Marine would lead us to expect, but rather of a normal type with a number of slightly enlarged acini, and considerable increase of the interacinar supporting tissue.

The section from the enlarged thyroid of a guinea-pig which died at birth or a few hours afterwards, indicates the acute myxoedematous type. There is a marked congestion of the thyroid and parathyroid glands. The cells forming acini are large and soft-looking; the nuclei of the cells are large and pale. Mitotic figures are present in some of the nuclei of parathyroid cells. Colloid is present in some portions of section but hardly takes any stain.

Conclusions

The conclusions which I wish to draw from this study are:—That British Columbia lends itself to a marked incidence of goitre in man and animals, and that therefore, goitre is not only a public health question, but also an economic one.

That endemic goitre, as we find it manifested in the Pemberton meadows, is a condition occurring in virgin soil with a remarkably pure water supply, and only inhabited by white men during the last 30 or 40 years.

That animals and human beings are very sensitive to goitre in this district, and that they did not bring the condition in with them but acquired it shortly after coming into the valley.

That unlike McCarrison's observations that the farther down the stream, the greater the

incidence, in this valley the farther up the stream the more pronounced is the occurrence of the disease.

The only portion of the valley where poor sanitation exists, and where one would think that a contagion might prevail, is in the Indian village, and here, as I said before, no goitre is to be found either in the pigs or the human beings.

These facts, together with the fact that the incidence of goitre in the valley has entirely disappeared through the use of iodine, makes one conclude that endemic goitre as we find it in B.C. is an iodine-deficiency disease.

That goitre, as it affects animals which live on fresh, green food during the summer, has a seasonal incidence, the goitre expressing itself more decidedly in the late winter and early spring months. The same seasonal incidence probably prevails amongst human beings though to a lesser degree on account of the great variations in diet. That we find from a study of animals and also human beings in a goitrigenous district, that it is not necessary for the thyroid gland to enlarge during pregnancy to -have cretinous or myxoedematous offspring. Therefore, in all goitrous districts, I suggest that one minim of tincture of iodine, or one grain of sodium iodide be given daily for 30 days during the 6th month and the same amount in the 8th month of pregnancy when the termination of pregnancy occurs in the late winter or early spring months; the 6th month is thought advisable because it is just before the sixth month that stainable colloid is found in the acini of the gland. I suggest also that the same amount be given in the same way to all women who have a noticeable goitre during pregnancy, and that one course of iodine of 30 minims, one minim a day, be given to every pregnant woman sometime during the last two months of pregnancy in all regions where goitre is common, and in this way cretinism and myxoedema amongst the newborn will become a negligible quantity.

That iodine should be administered early in all cases before the structure of the gland is permanently altered.

That iodine should not be administered carelessly in large amounts as this is not necessary for the proper functioning of the thyroid gland, but if given in very small amounts whenever the thyroid enlarges, the incidence of goitre in our province will be practically nil.

NOTE.—I wish to acknowledge the assistance given to me by the Vancouver General Hospital Laboratories under Dr. R. H. Mullin; Dr. R. E. Coleman for criticism and help regarding animals; Dr. A. W. Hunter for having microscopical sections made and reported on. The photo-micrographs were taken by Mr. Lloyd Bolton of the Biographical Dept. of the University of British Columbia.

Medical Treatment of Peptic Ulcer Without Alkalis.—In the opinion of Anders Frink, Chicago, the chief therapeutic indications for the treatment of gastric ulcer should be: to check excessive secretion of gastric juice, to inhibit excessive peristaltic contractions as far as possible, to relieve intragastric tension and pyloric spasm, and to cause inflammation to subside. Frick pleads for: (1) A sedative and antiphlogistic treatment of peptic ulcer in cases in which no surgical complications are present. (2) The systematic and prolonged use of bismuth subnitrate "a hautes doses," as advocated by Trousseau. (3) The restriction of the use of alkalis to only those cases of peptic ulcer in which bismuth fails to relieve pyrosis. (4) The ambulatory management of those cases of peptic ulcer which are not "acute" and of those which are not complicated by marked anaemia, gastric dilatation or gastroptosis. (5) The prevention of recurrences of peptic ulcer or, in other words, for the overcoming of the so-called tendency to peptic ulcer,by the eradication of infectious foci, by the exercise of moderation in eating, drinking and smoking, and by the establishment of spontaneous evacuation of the bowels. (6) The immediate use of bismuth subnitrate, for a short fast, and for a gradually increasing diet in case symptoms of peptic ulcer should recur.—*Jour. Am. Med. Ass.*, Feb. 23, 1924.

THE OPERATION OF CAECO-COLO-PLICO-PEXY

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MANY enquiries as to details of this operation, which is carried out with the object of fixing the caecum and ascending colon, make it desirable that a full account of the procedure should be given.

A paracentral incision, at least six to eight inches in length, is made on the right side of the abdomen, about one and a half inches from the mid line. Roughly speaking, one-third of this incision is above the level of the umbilicus and two-thirds below. The anterior layer of the rectus sheath is divided in the line of the skin incision. The inner edge of the sheath is caught up by clip forceps (usually three) at intervals. These are held alternately in pairs so that the inner part of the sheath is made taut in sections while the rectus muscle is dissected away from its under surface.

The connections of the muscle with the "linea alba" are also divided. Vessels are doubly clamped when possible before they are divided. Close union of the lineae transversae demands careful dissection so that the rectus sheath is not buttonholed. Ligatures are applied to cut vessels.

The rectus muscle is now freed posteriorly, care being taken not to tear branches of the deep epigastric vessels, until a line is cleared on the posterior layer of the sheath corresponding with that of the incision in the anterior layer, or even a little further out. Vessels which cross this line are clamped and ligatured. The posterior sheath and peritoneum are now divided along this line.

Retractors are inserted at the upper end of the wound in order to permit of free *inspection* of the undisturbed upper abdominal organs. This is followed by careful methodical *palpation* of these organs.

If abnormalities are discovered at this stage they are dealt with, *e.g.* adhesions implicating duodenum, gall-bladder, or under surface of liver, and possibly ulcer, or gall stones.

The lower part of the wound is now retracted and the condition of the lower abdomen examined. The presence or absence of appendicitis, "coloptosis," Lane's terminal ileal membrane, Meckel's diverticulum, mesosigmoid adhesion, or other abnormality is ascertained.

A specially designed retractor, 5 inches broad, is now inserted on the right of the wound and held steadily so as to expose the caecum and ascending colon. The appendix is removed, and its stump is buried under a purse string suture of fine linen, the ends of which are left long. The needle end should be about 15 inches in length after tying the purse string. Lane's ileal membrane, if present, should be divided, parallel to the bowel, until the ileum opposite to it is movable in a normal way. The intestines are held out of the way by a long, broad gauze strip placed below the caecum at the brim of the pelvis and between the hepatic flexure and liver, as well as between the inner edge of the wound and ascending colon.

The parietal peritoneum, usually more or less fused with Jackson's membrane, is incised along the outer side of the ascending colon and divided from below up as shown in Fig. 1. The extent of this incision varies with the extent of the mobility of the colon. It is never carried higher than about 1½ inches below the posterior edge of the liver. This incision is sometimes perforce continuous with the outer end of the incision dividing Lane's membrane. If the upper part of the colon is well fixed, it is unnecessary to divide Jackson's membrane there, unless a distinct kink is present at the hepatic flexure. If a well-marked "parieto-colic" band (Lane) is present, it is probably best always to divide it freely. This band usually affects the middle part of the ascending colon and often causes angulation there. Haemostasis must be accurate. Apply forceps before division of vessels.

The caecum and colon are now put on the stretch and held out of the abdomen by an assistant. The fibro-fatty tissue between the colon and muscles of the posterior abdominal

FIG. 1.—*Caeco-colo-plico-pexy.* Shows method of dividing posterior parietal peritoneum and Jackson's veil.

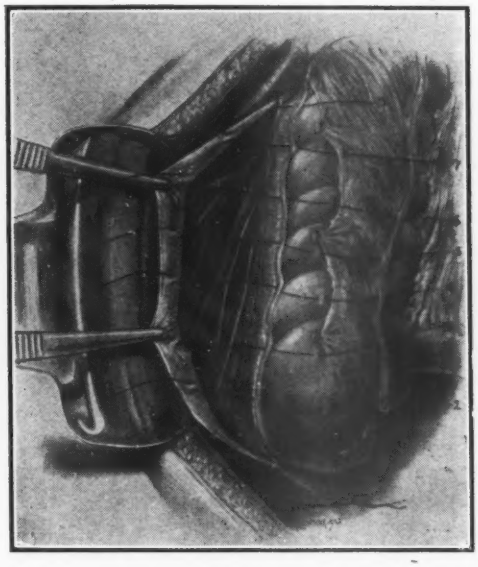

FIG. 2.—Shows insertion of sutures, through anterior longitudinal band, haustra, external longitudinal band of colon and outer flap of peritoneum. Note the insertion of the upper two sutures so as to avoid angulation of colon when they are tied. The fat and connective tissue are swept off the posterior abdominal wall so as to encourage strong fixation.

wall is removed or swept off upwards and downwards and to the side by a small, firm swab held in a pile-forceps. Care must be taken not to injure the nerves crossing this area, the spermatic or ovarian vessels, or the ureter. The ureter and these vessels usually adhere to the posterior aspect of the "meso-colon." Bleeding may occur from other small veins during this process. These bleeding vessels must be carefully secured and ligatured, sometimes a difficult process owing to their depth. If this haemostasis is not rigorously carried out, a haematoma may form which may become infected and require drainage. This occurred in one of my patients.

The needle, holding the long end of the appendix suture, is now passed in a zig-zag way through the peritoneum or raw tissue behind the caecum and finally through the lower end of the outer flap of peritoneum made by the vertical paracolic incision. (See Fig. 2.). When this "in and out" suture is drawn tight, there is no possibility of small bowel pushing its way up behind the caecum. Meanwhile, however, the ends of this suture (purse string appendix) are clamped, turned down and covered by a small towel. Thereafter, usually six or eight fine linen sutures, alternately black and white, are inserted at intervals of one-half to three-quarters of an inch, as follows, beginning three-quarters of an inch distant from the stump of the appendix. Each suture, except the upper two, catches up, all at the same level, (a) the anterior longitudinal band of the colon, (b) the haustrum midway between (a) and (c), (c) the external longitudinal band, and (d) the outer peritoneal flap (as shown in Fig. 2). Although the stitch, in passing through the wall of the colon, takes a good hold, the greatest possible care must be taken to avoid puncture or tearing of the mucous membrane, as this may lead to disaster. Each suture catches the outer peritoneal flap on its raw surface at a variable distance from its margin—usually about half an inch. When the sutures are drawn tight and tied, the free edge of this flap covers the punctures in the wall of the colon, and makes for safety in the event of trespass in the lumen of the gut. This advantage outweighs the objection which I have heard put forward, that the raw edge of the flap may dispose to adhesions of small intestine. It must be very rare for the small intestine to find its way to the outer side of the colon.

The second last upper suture picks up the peritoneum and muscle of the corresponding haustrum and of the external longitudinal band only. The uppermost suture catches only the

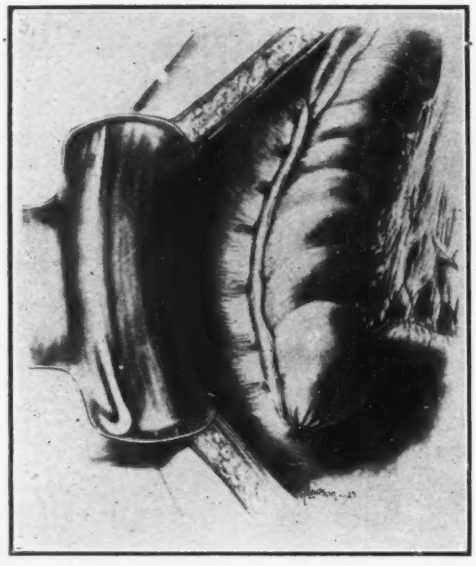

FIG. 3.—Operation completed. The lower few inches of the ileum are arranged to run smoothly from below up over the brim of the pelvis.

external band. Of course both of those sutures run through the outer peritoneal flap as well. This arrangement tends to prevent angulation of the bowel when the sutures are tied. (See Fig. 3).

If Jackson's membrane is voluminous and therefore likely to interfere with adhesion of the bowel in its new "bed," it should be removed. Its vessels can usually be controlled in bunches as indicated in Fig. 2.

In order to prevent disorder, the sutures are left long and, after clamping the ends, are arranged in pairs, each pair being covered by a fold of towel or gauze. They may, instead, simply be slipped into the slots of a rubber tube suture holder as shown in Fig. 4.

The sutures are then drawn tight and tied from above down, care being taken to push inwards the pieces of bowel which tend to bulge between them. The line of sutures is then inspected and if the intervals between any of them are such that diverticula of the colon may occur, additional sutures are passed in the middle of each such interval fixing the anterior longitudinal band to the flap of peritoneum.

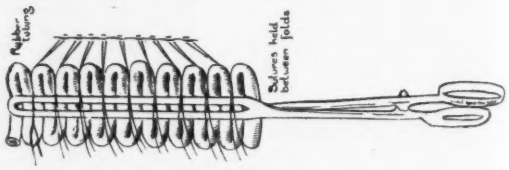

FIG. 4

The operation area is wiped clean. The lower end of the ileum is placed so as to cross the brim of the pelvis from below up, without other coils of intestine intervening. I do not think it is necessary to slide peritoneum over the raw area on the under surface of the mesentery and ileum, which is produced when Lane's terminal ileal membrane is divided. Indeed, attempts to do this may cause distorsion of the bowel when the caecum is fixed by suture as described above. This raw surface of the ileum and mesentery may become permanently adherent to the iliac fossa and brim of the pelvis, but, even so, in my experience, no harm results. When the bowel is bound down in this way, as it may be, for example, by Lane's membrane, I believe that, in the vast majority of cases, symptoms due to dragging on such adhesions or to kinking of the bowel therefrom, are produced, chiefly or entirely, only when distension or ptosis of the caecum and adjacent colon occurs..

The abdominal wound is closed in layers, the rectus muscle being tacked by two or three interrupted sutures to the midline before the anterior sheath is sutured.

The Orthopedic Treatment of Symptomatic Sciatica.—The orthopedic treatment of symptomatic sciatica described by Philip Lewin, Chicago, consists of: 1. Absolute rest in bed, the patient not being allowed to go to meals or to the lavatory. 2. Back strapping, moleskin adhesive plaster being applied very tightly across the lumbar, sacral and iliac regions. 3. Leg traction, adhesive resin plaster on swansdown being used.—*Jour. Am. Med. Ass.*, March 22, 1924.

A PRELIMINARY REPORT ON THE BACTERIOLOGY OF URETERAL CULTURES

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THE nature and purpose of this paper is to report in a preliminary way upon the bacteriological study of urine as obtained from the kidney by means of a ureteral catheter. The excretory power of the kidney for bacteria has been recognized for years but not sufficiently appreciated by clinicians. Albarran and others demonstrated that in blood infections the organisms were eliminated by way of the kidneys in some cases without damage that could be demonstrated.

In the collection of the specimens, the usual sterile precautions were employed. The cystoscope and ureteral catheters were sterilized by means of formaldehyde followed by thorough washing and irrigation with sterile distilled water, while the preparation of the patient on the other hand demanded cleansing of the genitalia, the instillation of an aseptic urethral anaesthetic, and draping with sterile linen. The instrumentation was facilitated by the use of a soluble, non-irritating, freshly sterilized urethral lubricant. Interrupted bladder irrigations accompanied the observation of the bladder itself which in turn was followed by catheterization of the ureters. The first 3 to 5 cc. of urine collected were taken as a specimen for the ordinary clinical laboratory examinations. The method of collecting specimens for cultural investigations consisted in: first, the careful sterilization by the actual flame, of surfaces which were liable to contaminate the specimen, namely the end of the catheter, the mouth and the cotton plug of the culture tube, and secondly allowing the first few drops of urine to escape, then 5 drops to fall free into the medium without coming in contact with the hot tubal opening.

The medium used for the initial culture was:

Distilled water	1000 cc.
Witte's peptone	10 grms.
Sodium Chloride (C. P.)	5 "
Dextrose	10 "
Andrade's Reagent	20 cc.

(Alkaline aqueous solution of acid fuchsin, as an indicator of acidity.)

After the usual titrations and sterilizations, this cultural medium was incubated at 37°C. for three days before use, to prove its sterility.

After the specimen was collected in this broth, it was incubated at 37°C for 12 to 18 hours, and then examined for the production of acid, acid and gas, or turbidity. If these features were persistently absent at the end of 96 hours, together with negative smears, the culture was reported sterile. The evidence of any growth entailed further investigations, and the isolation of the various micro-organisms in pure culture. This briefly is a statement of our technical methods employed in the study of the flora of the upper urinary tract.

Before entering upon an enumeration of the bacteria found, let us consider the cases from which the cultures were made. The 897 cases from the wards of the urological department of the Royal Victoria Hospital, were classified clinically as follows:

A.—Kidney		
1. Cortical Abscesses		5
2. Pyelitis—Pyelonephritis—Pyonephrosis		498
Including		
Hydronephrosis	Nephroptosis	
Tuberculosis	Nephrolithiasis	
3. Renal Tumours		9
Hypernephromata	4	
Carcinomata	5	
4. Cystic Kidneys		5
5. Congenital Anomalies		14
Horseshoe Kidneys	3	
Double pelves-ureters	11	
B.—Ureter		
1. Ureteral Calculi		114
2. Ureteral strictures and kinks		10
3. Cyst of ureteral orifice		3
C.—Bladder		
1. Cystitis chronic, ulcerative, cystic		14
2. Trigonitis		15
3. Cystocele		9
4. Calculus		1
5. Tumours		1
6. Ectopia Vesicae		1
D.—Prostate		
Prostatitis—Prostatism—Calculi		39
E.—Urethra		
Urethritis—Stricture-Caruncles		45
***F.*—Essential or Undetermined Haematuria		4
***G.*—Enuresis		2
***H.*—Non-Urological Conditions		105
Male 434. Female 463.	**Total**	**897**

It will be noted in the above table that one-third of the cases included lower urinary tract lesions, and strictly non-urological conditions. In the 897 cases, 434 were males and 463 females.

The cultural results in this study of 1728 ureteral catheterizations were broadly classified as follows:

1. Organisms of the coliform group	468	27.5%
2. Group of gram positive bacilli	32	2. %
3. Organisms of coccal group	211	12. %
4. Sarcinae and yeast (contamination) ...	9	0.5%
5. Mixed cultures (including 1-2-3-4)	18	1. %
6. Sterile (see note below)	990	57. %

The coliform group of organisms showed a marked variability in morphological and cultural characteristics. In size they varied from coccoid forms to larger thick bacilli, while motility ranged from the very active down to the non-motile types. Haemolysis was a feature noted in a few. A study of the various carbohydrate fermentation reactions, indol determinations, reactions of gelatin and litmus milk, together in some instances with the agglutination reactions, led to a further classification of the group, based on the work of Levine and others:

The coliform groups consisted of:

		Right	*Left*
1. *B. coli communis*	241	122	119
2. *B. coli communior*	85	47	38
3. *B. coli anaerogenes*	7	2	5
4. *B. coli vulgaris*	33	19	14
5. *B. acidformans*	8	3	5
6. *B. lactis aerogenes*	15	6	9
7. *B. cloacae*	3	2	1
8. *B. typhosus*	1	1	0
9. *B. paratyphosus*	3	2	1
10. *B. paracolon*	2	1	1
11. *B. pseudo-dysenteriae*	6	3	3
12. *B. Morgan No. 1.*	2	1	1
13. *B. faecalis alkaligenes*	63	35	28
14. *B. pyocyaneus*	1	1	0
	470	245	225

The majority of these urinary infections were due to the bacilli of the colon-typhoid-dysentery group, while *B. coli communis* and *communior* were the predominating varieties. In the case of pyelitis due to *B. typhosus* the organism was not only recovered from the urine of the right kidney and stool but also from the bile. The sources of the paratyphoid bacilli and B. Morgan No. 1. were also traced to the gastro-intestinal tract. The pseudo-dysenteriae bacilli were isolated in patients giving a history of previous intestinal disturbances, but were only isolated in the faeces of one case. The urines from which the coliform organisms were cultured on microscopical examination showed inflammatory cells in 85%, while in 50% there were none to be found. As regards the sex in the coliform infections, it is interesting to note that of bilateral infections in the male, 53% were of this group, while in the female it was 74%. In the unilateral growths of the coliform group, 34% were males, while 66% occurred in the females. The greater preponderance in the female expresses significantly the mechanical factors concerned in renal infections; the imperfect drainage produced by the sagging kidney, as shown by Crabtree, our clinic, and others, and the pressure of the gravid uterus, giving that necessary stagnation of urine, and affording the organisms an opportunity to multiply and grow, and at the same time rendering the kidney parenchyma less resistant from the distention of the renal pelvis.

The group of Gram positive bacilli which were isolated included 16 strains of diphtheroids, 3 of *B. subtilis*, and 13 spore-formers. As they were unaccompanied by inflammatory cells, or at the most two or three, we think it is allowable to regard these as contaminations from either the lower urinary tract, or the outside, at the same time placing in this category yeast and sarcinae.

The micro-organisms included in the coccal group consisted of the staphylococci, the streptococci and enterococci.

		Right	*Left*
1 Staphylococci	200	105	95
2. Streptococci	10	6	4
3. Enterococcus	1	1	0
	211	112	99

A study of the chromogenic power, the property of gelatin liquefaction, and the fermentative reactions of the various strains of the staphylococci led to the further classification of these organisms as noted by Winslow and his associates:

		Right	*Left*
Staphylococci albi	78	37	41
" albi urethrae ...	35	19	16
" candidi	56	29	27
" candicantes	15	11	4
" aurei	9	5	4
" citrei	1	1	0
" auranteaci	6	3	3
	200	105	95

NOTE:—Included in No. 6 are cultures taken from non-urological conditions, from the uninvolved side in unilateral lesions, from cases of lower urinary involvement only, prostatitis, urethral strictures, etc., and from cases of renal tuberculosis, congenital anomalies, etc.

The staphylococci were mainly represented by the albus variety, the strains commonly found on the skin and in the lower urinary regions. The aurei occurred in cases of perirenal abscesses. Twenty-seven per cent. of the staphylococci isolated were accompanied by pus in the centrifugalized urine, and in such cases advanced pathological conditions of the kidney and ureter were definitely proven, as in tuberculosis, pyonephrosis, etc.

While no attempt will be made to analyze the sources of these coccal infections, it is interesting to note that 69% occurred in male patients, while only 31% were found in females. The streptococci proved to be all of the non-haemolytic variety, and were isolated from the same patient on repeated cystoscopic examinations from both sides, being accompanied on each examination by pyuria.

Total catheterizations recorded sterile		990
1. Strictly non-urological cases	162	
2. Uninvolved side in unilateral lesion ..	260	
3. Lower urinary tract involvement only	177	
4. Cases of renal tuberculosis congenital anomalies, etc.	107	
		706
Sterile cultures from upper urinary tract lesions		284
or 16% of total cultures taken.		

The sterile cultures recorded appear somewhat unusually high, unless a further analysis of this group was made. Firstly must be considered the number of sterile cultures which were made from strictly non-urological cases, for the purpose of a differential diagnosis, exemplified by cases of cholelithiasis, inflammatory and neoplastic conditions of the gastro-intestinal tract in both sexes, and in the genital tract in the female, calcareous retro-peritoneal glands, etc., totalling 162 catheterizations. Secondly the sterile cultures made from the uninvolved side in unilateral lesions, such as cases of unilateral nephrolithiasis, ureteral calculus, renal tuberculosis, etc., totalling 260; thirdly conditions of the lower urinary tract, such as prostatitis, caruncles, etc., where the ureteral specimens were collected merely to complete the examination of the case, totalling 177, and lastly the sterile cultures obtained in congenital anomalies of the upper urinary tract, cases of non-infected ureteral calculi, renal tuberculosis, etc., totalling 107. When such sources are considered, it leaves 284 sterile cultures which have been made in the case of other upper urinary tract lesions, or 16% sterile cultures of the total cultures taken, viz. 1728.

Conclusions

1.—Many varieties of bacteria are eliminated in the urine.

2.—Gram negative bacilli predominate in renal infections .

3.—Both bilateral and unilateral coliform infections predominate in the female.

4.—That the urethra probably explains the greater frequency of coccal diphtheroidal and other non-coliform organizations isolated in the male.

We wish to express our deep appreciation of the cooperation of Dr. A. A. Bruere, the director of the Bacteriological Laboratories of the Royal Victoria Hospital, in making this cultural investigation possible.

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Old Fractures of the Ankle.—It is the belief of Emil S. Geist, Minneapolis, that it is absolutely necessary to make liberal use of the roentgen ray in the treatment of ankle fractures, both before and after so-called setting. It is necessary to recognize a type of backward fracture dislocation of the ankle. When fresh, it is easy to treat; when old, it is a bête noire. Correct alinement of the bones comprising the ankle joint is necessary in order to prevent later disability. Thorough and efficient after-treatment by massage, hot pack applications, and active and passive motion are necessary. In these cases the Achilles tendon will shorten if it is not watched. In all ankle fractures, no matter of what type, the foot must be held at right angles with the leg.—*Jour. Am. Med. Ass.*, March 22, 1924.

THE INCIDENCE OF DIABETES MELLITUS IN DISEASES OF THE GALL BLADDER AND ITS PASSAGES

(Biometrical Study)

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ALTHOUGH the specific nature of diabetes mellitus is still unknown, much data are available concerning the possible factors predisposing to the development of this disease. Because of the number of these an attempt is being made to determine the relative importance of each. Since the data are affected by various causes, it need hardly be remarked that only by the application of biometrical methods can the results of such a study be of real value. This fact appears to be overlooked in the numerous clinical studies which have been made upon this phase of the subject. By biometrical methods it is possible to elucidate quantitative data affected by a multiplicity of factors. In this communication we are concerned with one phase of biometrics, namely, the probability of concurrent events, with particular reference to the relation between diseases of the gall bladder and its passages and diabetes mellitus.

It is common experience that glycosuria is a phenomenon frequently observed in patients suffering from acute pancreatitis. Pancreatitis, though of a mild degree, is occasionally noted in cases of cholelithiasis and cholecystitis. If we accept a hyperglycaemia as evidence of pancreatic insufficiency, after excluding the other usual causes, the incidence of pancreatitis is much greater than is generally regarded in cases of cholecystitis and cholelithiasis. Routine examination of the blood sugar of patients in this hospital who present symptoms of cholelithiasis, showed that in over eighty per cent of all such cases a hyperglycaemia was found, though not of a sufficient degree to produce a glycosuria.*

The following are the data obtained from the records of the Montreal General Hospital. Amongst the last 45,995 admissions to the wards, there were 366 patients who had disease of the gall bladder and its passages, including 178 cases of cholelithiasis, 171 cases of cholecystitis and 17 cases of acute pancreatitis. There were 319 cases of diabetes mellitus and 18 patients who suffered both from diabetes mellitus and disease of the gall bladder and its passages.

Since there were patients found to have both diabetes mellitus and lesions of the gall bladder and its passages, it appears necessary to determine whether these two diseases are associated together more or less than would be expected if chance or random association were the only influences bringing them together. This will now be considered.

One of the simple theorems in probability is that "if the separate probabilities of each of several independent events are respectively $p_1, p_2, p_3, \ldots\ldots$ the probability (P) of their all occurring together is $P = p_1 \times p_2 \times p_3 \ldots\ldots$" This theorem has been applied to the above available data, and the combined results are recorded in the tables below.

Table I.
Total number of patients 45,995

Disease	*No. of Cases*	*Probability*
Gall bladder and passages (total)	366	0.00795 (p_1)
Cholecystitis	171	0.002717 (p_2)
Cholelithiasis	178	0.002869 (p_3)
Pancreatitis	17	0.000369 (p_4)
Diabetes Mellitus	319	0.006935 (p_5)

Table II
Concurrent event table

Disease	*No. of cases*	*Factor*	*Due to chance*
Gall bladder (total) and diabetes	22	0.0000547 (p_1p_5)	2.5
Details of above			
Cholecystitis and diabetes	1	0.0000257 (p_2p_5)	1.2
Cholelithiasis and diabetes	7	0.0000268 (p_3p_5)	1.2
Pancreatitis and diabetes	4	0.0000025 (p_4p_5)	0.1

*Awaiting publication.

The data here show that, in the experience in this hospital, approximately, nine times as many patients with disease of the gall bladder and its passages had diabetes as would be expected if the influencing factors were completely independent. A detailed analysis of the various forms of the disease shows that the incidence of diabetes was greater in cholecystitis than in cholelithiasis, and that in acute pancreatitis the incidence was forty times greater than chance would allow. From a biometrical point of view a causal relation is demonstrated between diabetes mellitus and diseases of the gall bladder and passages.

The writer is very much indebted to Miss Althea Frith for the collection and the necessary assortment of the data.

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PRE- AND POST-OPERATIVE PURGATION

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IN listening to discussions in our local society on the subject of purgation both before and after operation, it has struck me that surgeons differ greatly on this very important subject, and for this reason I wish to place the following facts before some of the unbelievers.

During our college and hospital days we were taught as a routine treatment, that all cases got a dose of oil the night before operation; also, as a rule, two to three days later calomel or some other drastic purge was given. We took it for granted that it was essential, just as the castor oil following confinement cases was looked upon as an absolute necessity. Once a routine like this takes hold of the profession, it is hard to shake, but it has been proven conclusively by both physiologists and surgeons that it is not only unnecessary, but in a majority of cases is positively harmful.

Taylor has shown by careful tests that purgation induces definite fatigue in the intestinal muscles and that harm may be done by a strong purge. Gosset has carefully observed the results in patients following the usual dose of oil. The kidneys are deprived of a portion of their excretory function at a time when their assistance is very desirable, and nitrogenous products contributing to shock are liable to be absorbed into the circulation, and an oliguria of from 20 to 70 per cent. frequently follows.

Gillespie and Miller have proved that the fate of bacteria introduced into the gastro-intestinal tract depends entirely on the medium of introduction and on the amount of hydrochloric acid in the gastric secretion. There is a steady decrease in the number of bacteria as digestion proceeds and in proportion to the degree of acidity obtained. If by the exclusion of fluids the ingesta can be delayed for eight to nine hours in the stomach with normal acid secretion, but few bacteria will survive. Such bacteria as are in the intestinal tract find their way into the chyle, lymph and blood streams only through an irritable mucous membrane. Cathartics in general produce their result chiefly by an irritating action on the gastro-intestinal mucous membrane. In a hundred individuals the blood culture before the cathartic was administered showed no culture, while 62 out of 100 taken after a purgative had been given, showed a decided colony of micro-organisms. This bacteraemia endured for about 24 hours.

As another author has pointed out, the small intestine is always empty twelve or more hours after a meal. The colon can be cleared by enemas. Psychic and physical weakness produced by dehydration of the body, disturbance in the salt balance of the system, and loss of sleep occasioned by the frequent bowel movements during the night preceding operations,

are the result of a strong purge. Oliver Wendell Holmes has put it very aptly when he says, "If it were known that a prize fighter were to have a drastic purge before going into the ring, no one will question that it would affect the betting on him unfavourably." If this is true for a powerful man in perfect health, how much more true must it be of a sick man battling for life.

After all, however, the most important and conclusive objection is contained in the statement made by nearly all who write against pre-operative purgation. Every surgeon has noticed that the emergency patient who comes to the hospital in need of immediate operation has a good post-operative recovery and an uneventful convalescence, whether it is a case of acute appendix or a crushed limb requiring immediate amputation. If this be true, and the statistics in favour of it are strong, then routine pre-operative purgatives must be relegated to our professional sins of the past.

Alonzo and Clark on post-operative purging, state that when purgatives succeed, they simply show that peritonitis, if present, was not extensive enough to preclude recovery. If the intoxication is severe enough the bowels will never move and the patient will die no matter what is done. McPherson states that routine purgatives after confinement are not only useless but harmful. Out of 322 women who were not purged 3 only had fever; out of 322 women who were purged, 28 had fever; he concludes by saying that a low grade fever during the puerperium may be due to catharsis.

In an excellent paper by Alvarez, he gives the following summing up: 1.—Some of the purgatives owe their effects to the fact that they are irritant poisons that must be removed quickly from the body. Others act by interference with intestinal absorption and by upsetting the balance of salts. In either case they bring about a pathological condition. The body is weakened and not strengthened.

2.—We know now that the dehydration of the body and upset of the salt balance are particularly harmful before an operation in which there may be haemorrhage or vomiting.

3.—With magnesium sulphate there may be an increased amount of fluid in the bowel to disturb those who want it emptied. In operations on the colon, liquid contents are harder to control than solid masses.

4.—There is an increased growth of bacteria.

5.—By weakening some parts of the bowel and making others more irritable the even flow from stomach to rectum is impossible.

6.—Whether from disturbance in mobility, in absorption, in the circulation, or in the bacterial condition, there certainly is a tendency to flatulence and distension.

7.—When bowels must move more frequently during the night the loss of sleep is considerable.

8.—If the patient should happen to have some intestinal obstruction, a gangrenous appendix, or a badly diseased Meckel's diverticulum purgation may directly cause death.

9.—Purgation makes the bowel react poorly to drugs and as a consequence there may be great difficulty in meeting a post-operative emergency.

10.—Emptying the bowels by starvation and purging makes the resumption of colonic activity much more difficult. The colon must be filled to a certain extent before it will empty.

I have given this summary in full, as it covers so completely the disadvantages of purgation.

Before my overseas experience I had given up purging ,and in my work among the wounded, I was impressed more than ever that the post-operative purging was absolutely unnecessary and in many cases dangerous. Men came into the casualty stations and base hospitals with all varieties of injuries and the majority were greatly shocked. No preparation was possible and in most cases these men needed the replacing of lost fluids rather than any depleting by purgation.

How often does one read reports of cases of sub-acute or acute appendix in which all went well following operation until the third day. Orders in the case show that calomel in divided doses, followed by salts was given. As a result a stormy two days followed; in some cases ileus and death.

Give your patient time and use morphia judiciously and all will come right. If necessary, between the fifth and seventh days give an enema and nature will look after the rest.

Why do we, or did we, purge at all after confinement cases? Try it without and you

will find the puerperium much smoother for the mother and often less anxious for yourself. With a distended abdomen following operation, or in acute abdominal conditions, again and more firmly than before, don't purge. Use stomach lavage freely with water or sodium bicarbonate; then give a dose of morphine with atropine, to be repeated if necessary. Free fluids, glucose or sodium bicarbonate by rectum. Morphine does not produce intestinal paralysis except in toxic doses in a normal abdomen. It has just the opposite effect in paralytic cases and you will find the patient will usually soon pass gas freely. It is well to remember that as C. A. Howard has put it: "Bowels don't die in a flat abdomen, and whipping won't help a functional paralysis of any bowel."

ON HYPERTHYROIDISM

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IN viewing hyperthyroid conditions from a medical aspect we have first to consider "What are the functions of the normal gland?" Briefly, the function is the manufacture and delivery to the blood of an active substance known as thyroxin. It also produces a colloid material which accumulates in the lumen of the vesicles and which seems to be an accessory to the production of thyroxin and a store-house for iodine.

Now thyroxin probably acts on all cells of the body as a catalytic agent hastening the formation of that quantum of energy which on excitation is converted into the various forms of energy associated with the phenomena of life. Under basal metabolic conditions this transformation approximates 40 cal. per sq. m. of body surface for the average adult. In a thyroidless person it will approximate 30 to 40% below this, and under unusual or pathological conditions of hyper activity it may rise to at least 100 per cent. above this.

The human body is estimated to contain about 14 mg. of thyroxin and it is doubtful if this amount varies very much. There are probably three stages in thyroid activity, one the elaboration and storage of thyroxin, one in its discharge, and possibly a resting stage in which the demands of the tissues are satisfied and the storage space in the gland exhausted. It would seem that a lowering of the thyroxin content in the tissues acted as a stimulus to the thyroid. Thus, the greater the metabolic stress of the individual and the greater exhaustion of thyroxin in the tissues the greater the stimulus of the thyroid. This stimulus probably reaches the gland through its nerve supply, and the first effect is probably one of great increase in the blood supply. Normally the thyroid has approximately four times as much blood flowing through it per 100 grms. of tissue as any other organ in the body, and under these conditions of added stimulus, it increases its blood supply much more, and in periods of menstrual activity and pregnancy when the supposed exhaustion of thyroxin is much greater, a condition of physiological hypertrophy exists, the enlargement being largely due to this great increase in blood supply. If, however, due to an insufficiency of iodine or possibly other factors, the thyroid is unable to elaborate sufficient thyroxin, diffuse colloid hypertrophy or growth of adenomatous tissue would appear to be stimulated.

Now hyperthyroidism is a condition in which the content of thyroxin in the tissues is above normal. Basal metabolism determinations are almost essential to its estimation. There are undoubtedly three conditions in which it occurs.

1.—Following the administration of thyroid gland or its active ingredient thyroxin.

2.—In persons having hyperfunctioning adenomatous goitres.

3.—In persons having exophthalmic goitre.

It is also possible or likely that some degree

of hyperthyroidism exists in essential hypertensive cases and certain psycho-neurotic states.

Can the administration of thyroxin or thyroid put the gland at rest? This seems quite possible. Boothby reports that the intravenous injection of 1-12 gr. of thyroxin will cause a large colloid goitre with bruits and thrills to disappear in from 12 to 24 hours and that it will also materially reduce certain adenomas without hyperthyroidism.

Iodine scarcely serves the same purpose although one would expect it to do so if the cause were in a deficient supply of iodine for the proper elaboration of thyroxin. Marine and his associates have shown its distinct value in colloid goitre of children. In persons over 30 years of age, however, iodine has a distinct danger in that it is apt to activate adenomatous tissue and initiate hyperthyroidism. This danger does not seem to be present with the administration of thyroxin or thyroid.

The cause of the development of adenomatous tissue in the thyroid is probably as with colloid goitre due to a deficient supply of iodine, although McCarrison has made some very interesting and convincing studies that in colloid goitre at least infected water supply is a causative agent.

Later in life, however, when the individual comes under greater metabolic stress this adenomatous tissue begins to function and, as has been stated before, large doses of iodine may be the initiating stimulus. Once, however, these adenomas begin to function, they apparently do so without regard to the body needs and a state of hyperthyroidism is produced. Rarely does this occur before 30 or 35 years; the average duration of adenomatous goitres before they begin to hyperfunction is according to Plummer, about 16 years. The average age incidence was 48, and 78% were over forty. This is quite different from the exophthalmic variety in which the average age incidence was 37 and 61% of cases were under 40.

The symptoms of adenomatous goitre with hyperthyroidism would seem to be directly due to the increased thyroxin output and the circulatory phenomena are a direct outcome of the increased metabolism, the systolic blood pressure tending to be considerably raised and the diastolic somewhat lowered with a large pulse pressure. Many of these cases are, however, curiously associated with hypertension and in these cases the peripheral resistance is much greater and a diastolic pressure of over 100 is not uncommon, and, of course, this greatly increases the work and strain on the heart. The logical treatment of this type of hyperthyroidism, if our knowledge is correct, is surgical; that is, removal of the adenomatous tissue unless x-ray therapy holds out more promise, the medical man being here only interested to the extent of preliminary rest and appropriate digitalis therapy to get the patient into the most favourable condition for such procedure.

Exophthalmic goitre is defined by Boothby in *Oxford Medicine* as a constitutional disease, apparently due to excessive and probably abnormal secretion of a thyroid gland, showing pathologically diffuse hypertrophy and hyperplasia. The symptoms would seem to be undoubtedly due to a thyroid gland, of which in some way the secretion has been altered, accounting for the several peculiar symptoms of exohpthalmic goitre which cannot be produced by the administration of thyroxin or thyroid extract. The characteristic gland of exophthalmic goitre has been shown to have a very low iodine content averaging 1-20 to 1-50 only of the normal gland. This would at least seem to indicate that iodine is not being stored in the gland. It has also been pretty well proven that contrary to the general belief the administration of iodine does not make these cases worse, and it has been recently shown by Plummer that the intensity of post-operative reactions tend to be decreased by iodine. So it would seem probable that the peculiar intoxication of exophthalmic goitre is due to the presence in the body of incompletely iodized thyroid secretion.

But the real cause is still a mystery. Many theories have been advanced. Many years ago it was suggested that it was an affection of the sympathetic nervous system, but without much evidence, until recently Cannon apparently produced the syndrome of exophthalmic goitre in a cat by persistent stimulus of the cervical sympathetic ganglion by suturing to it the phrenic nerve, and Wilson has added evidence that there is possibly a chronic infection of the sympathetic nervous system. The adrenals may also be a factor.

There has been much speculation as to the rôle of the thymus gland as it has been found

hyperplastic in quite a number of cases, and I believe occasional cures or great improvement have followed x-ray therapy directed to the gland. It would seem to be only part of a general condition, however.

The pituitary and sex glands have also certain inter-relationships and everything considered it would not be surprising if the causative factor were found outside the thyroid gland, although we are now removing a large part of the gland as one of our most efficient means of treating it.

It is very doubtful, however, if surgery ever cures exophthalmic goitre; that is, in a strict sense. We ligate, we remove a smaller or larger portion and benefit results; so much so that it will possibly allow for spontaneous recovery, but there can be scarcely any question that the removal of a large portion of the diffuse hypertrophied and hyperplastic gland can only symptomatically relieve the intensity of the symptoms. But do not take it that I am condemning surgical interference, as it is life-saving in many cases.

But there is no specific medical treatment, yet it has been claimed, and I think with much truth, that all cases should respond to complete mental and physical rest. But is this possible? I rather think not. If the patient is so situated that they can be relieved entirely of the stresses and anxieties of life, rest, and prolonged rest, with appropriate medication should restore them to normal, but it is hard or impossible to get away from the anxieties of long periods of disability and its financial burdens in the majority of our cases. Much, however, can be done in a medical way either as a means to a cure or as a preliminary to operation.

Diet is important, but there is no special diet. A diet free from condiments and excess of purins that might embarrass an already overworked excretory system is to be aimed at, and yet a sufficiency up to 5,000 cal. with a protein portion up to 2 or 3 grams per kilo. body weight is necessary, together with a large supply of water. Remember that your patient is practically in the same condition physiologically as a man doing hard physical labour, not for 8 or 10 hours, but for 24. If the patient is kept well nourished, the organs, especially the heart, are in less danger of exhaustion, fatigue and degenerative processes.

The heart and circulation have always been the special concern of medical men. Quite recently, Boothby and Wilson have shown in a series of 377 cases, mostly of the exophthalmic variety, that serious cardiac involvement was rather infrequent, and only 2% of the cases had sufficient clinical evidence of myocardial injury to classify them as serious cardiac disease, and in a series of 23 successive autopsies in only one could the heart be considered as the major cause of death. This is in a sense startling, but the explanation would seem to be rather evident. The rapid heart is the natural physiological reaction to the increased metabolism and is very similar to that which occurs during exercise. It is probably only when fatigue sets in, coupled with possibly some direct toxic effect on the muscle, that pathological dilatation and insufficiency occurs, and as a result of the consequent anoxaemia, myocardial degeneration sets in.

In those cases showing signs of fatigue and incompetence with or without auricular fibrillation or other irregularities digitalis is very valuable. It is no use, nor is it indicated, in the ordinary well compensated case where the rapid rate is largely due to the elevated metabolism and is to that extent physiological. In giving digitalis, however, where indicated, it should be given until its full pharmacological effects are produced. This amount is usually 0.15 c.c. of a good tincture per pound weight. It is usual to give 30 min. three times a day until the approximate total dose is approached and after that more cautiously, stopping at the first sign of loss of appetite or nausea, and trying to avoid giving it to the stage of producing vomiting. Digitalis is, I believe, also indicated as a preliminary to operation; it would seem to have a distinct value in preventing auricular fibrillation and cardiac break-down. Ergot or ergotoxin theoretically should be of some use, especially if the disease is due to a sympathetic stimulation as it opposes the augmentor stimulation of adrenalin, but of its practical use I know nothing. Since hyperthyroidism is often accompanied by a decreased secretion of the pituitary gland, this has also been tried and occasionally with beneficial results.

Others try to divide their cases into two classes, sympathicotonics and vagotonics. In the former type of case pituitary extract (whole gland) two grams three times a day with pilocarpine grs. 1-20 is given; in the vago-

tonic types, pituitary extract (whole gland) two grams with atropine three times a day. They report, at least, amelioration of symptoms.

Many cases should undoubtedly be handed over to the surgeon, but I do not think that the physician should be discharged at the operating room. After all, surgery is only a therapeutic procedure and a regrettable one in many ways in this disease. The post-operative treatment is in a way largely medical. Anoxaemia is probably most greatly to be feared, and anything that interferes with a free and easy supply of air and unhampered breathing should be carefully guarded against.

A CASE OF HENOCH'S PURPURA*

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PURPURA is the name applied to spontaneous haemorrhages developing in and beneath the skin and mucous membranes. There are many pathological conditions in which purpura is seen as a symptom forming part of the symptom-complex of those conditions and it is therefore spoken of as secondary or symptomatic purpura. To other conditions in which haemorrhages into the skin or from the mucous membranes and viscera, of apparently unknown origin, constitute the chief symptom, we apply the name idiopathic or primary purpura. Probably the simplest classification is that used by Minot and Lee.[1] They apply the name purpura haemorrhagica to those conditions associated with marked diminution in the number of blood platelets and subdivide this purpura haemorrhagica into two subdivisions:—

1.—Idiopathic purpura haemorrhagica — a disease entity.

2.—Secondary or symptomatic purpura haemorrhagica as seen in acute lymphatic leukaemia, pernicious anaemia, diphtheria, etc.

The cases that do not belong to this purpura haemorrhagica group they classify as "Forms of purpura other than haemorrhagica." These later cases readily fall into three main groups.

1.—Simple symptomatic purpura — those cases associated with definite disease but with no diminution in the blood platelets and which may be briefly tabulated as follows:

(a) Purpura in acute infectious diseases as, typhus, smallpox, and cerebro-spinal meningitis.

(b) Purpura in chronic disturbances of nutrition as in Bright's disease, arteriosclerosis, cancer, tuberculosis, chronic alcoholism, etc.

(c) Senile purpura, in which successive dark purple spots appear on the outer side of the forearm and are usually of larger size than the purpuric spots of other conditions.

(d) Toxic purpura—many drugs are mentioned as causes but iodine heads the list. Others are copaiba, chloral, mercury, arsenic. Other substances as the endotheliolysin of snake venom or histamin may excite purpura. It is possible that these drugs bring about an alteration in the inorganic metabolism of the blood which alteration presumably permits an increase of the permeability of the walls of the blood vessels. Chiari and Januschke[2] showed that an alteration of the inorganic substances of the blood can produce such a change. They showed that if sodium iodide is injected intravenously in dogs fluid is excreted in the pleural and other body cavities, while if calcium chloride is injected simultaneously these cavities remain dry.

(e) Nervous purpura—rarely a purpuric eruption may be seen along the course of certain nerves. This is probably an atypical herpes.

(f) Mechanical purpura — following paroxysms of whooping cough, or an epileptic attack, or as a result of tight bandages or tourniquets.

2.—Idiopathic purpura in which purpura may occur by itself but is more often associated with one or more other conditions such as urticaria, erythema, oedema, arthritis and vis-

*Read before Section of Paediatrics, Academy of Medicine, October 18, 1923.

ceral manifestations. These cases fall into three groups:

(a) Simple idiopathic purpura—purpura simplex, in which there is no haemorrhage from the mucous membranes.

(b) Arthritic purpura—purpura rheumatica —Schönleins disease—in this group are all cases of purpura with arthritic manifestations uncomplicated by haemorrhage from any mucous membrane.

(c) Purpura with visceral symptoms — usually spoken of as Henoch's purpura to which group belongs the case we will speak of later.

3.—Purpura fulminans—a disease rapidly proving fatal usually in less than 24 hours. There are no haemorrhages from the mucous membranes so that it is looked upon by many as a very severe form of simple idiopathic purpura.

We see, therefore, that Henoch's purpura, purpura with visceral manifestations, is in that group "Purpura other than purpura haemorrhagica." The first accurate description of this disease was made by Henoch[3] in 1874, though Osler[4] states that the first case described is contained in Willan's work published between 1796 and 1808.

In 194 cases of idiopathic purpura Pratt[5] found 43 cases of Henoch's purpura, 31 of which were in males and 12 in females. Its frequency of occurrence is about equal to that of the other types of idiopathic purpura as shown in this same series of Pratt, as there were 45 cases of purpura simplex and 54 cases of purpura rheumatica. In this same series purpura haemorrhagica occurred 52 times. Among 356,478 admissions to hospitals in various countries idiopathic purpura occurred 192 times. When we compare these two series of Pratt's we find that the incidence of Henoch's purpura in admissions of all kinds is about one in 8,250 —certainly not a very large incidence.

With regard to the age incidence we find that it is a disease of early life. Pratt's series shows:

from 1 to 10 years	11 cases
from 10 to 20 years	19 cases
from 20 to 30 years	6 cases
from 30 to 40 years	3 cases
from 40 to 50 years	4 cases

The youngest patient was 4 years of age and the oldest 47. Heredity plays no part in the etiology nor would there appear to be any seasonal incidence.

The onset of an attack varies. There may be headache, anorexia and prostration, or the initial features may be a purpuric outbreak or an attack of abdominal colic. There is usually pain in or about the joints as seen in the other types of purpura. Fever occurs in about half the cases, but is usually slight, from 99° to 100° though there may be a temperature of 102° or more and with the joint involvements the picture at first may simulate that of an acute articular rheumatism. The abdominal symptoms soon appear, consisting of colicky pain often very severe. The abdominal wall is rigid and contracted and there may be marked tenderness to pressure. This tenderness is frequently diffuse but not infrequently is localized about the appendiceal region or the umbilicus. At first the bowels are constipated, often to be followed by diarrhoea, and usually there is melaena as a result of the haemorrhage into the intestinal tract. Vomiting frequently occurs, later containing blood in those cases where there is gastro-intestinal haemorrhage. The duration of these severer abdominal symptoms is usually a few days, rarely more than a week, the average duration of the entire illness being about one month. Rarely does the disease consist in a single attack. After an interval varying from a few days to weeks or months another attack occurs.

The purpuric eruption is similar to that of simple purpura. It is chiefly composed of petechiae, although patches two or three cm. in size do occur. It appears more commonly about the legs and if there is much joint involvement may appear about those joints. The other cutaneous lesions of the erythema group are frequently present and cases similar to Henoch's purpura occur in which purpura is absent, but urticaria, erythema, or oedema may be present. In Pratt's series urticaria was present in 13 cases (30%), erythema in 6 cases and oedema in 15 cases. Osler was especially interested in the relation of urticaria to purpura and described 4 types of eruptions:— (1) The purpuric spots may be slightly elevated, purpura papulosa; (2) Haemorrhage into definite urticarial wheals; (3) Simultaneous outbreak of purpura and urticaria; (4) A purpuric attack may be followed by an

urticarial eruption or the reverse may occur.

Osler regarded purpura rheumatica as the haemorrhagic type of an exudative erythema and he would place Henoch's purpura in the same group.

Irregularity in the onset, duration and character of symptoms in this type of purpura is notorious . Purpura or the erythema group of skin lesions often occurs before, and sometimes, long after the abdominal crises. Frequently arthritis is absent. In other instances a sharp attack of abdominal colic with or without melaena and fever may be the only symptom past or present, more frequently there is also vomiting or diarrhoea. Melaena occurs more frequently than does haematemesis. Epistaxis is not uncommon and occurred in 8 cases of the series of 43. Bleeding of the gums occurred in 3 cases. The spleen has frequently been found enlarged.

The most serious complication is an acute nephritis. It is much more frequent in this than the other varieties of purpura and occurred in 20 of the 43 cases mentioned above. It is frequently of the acute haemorrhagic type. Albumin is abundant and numerous tube casts are found. Oedema may be absent as was the case in the patient to be described. Haematuria is common . The exact relation of the renal disorder to the disease is not known.

With regard to the pathology of the disease it is not known in exactly what manner the purpuric lesions and the associated skin lesions are produced. Minot and Lee[6] are of the opinion "that some change occurs in the small blood vessels increasing their permeability to the blood constituents similar to the mechanism that is assumed to obtain in some of the simple symptomatic purpuras produced from toxic causes. Though the change in the blood vessels may occur in many parts of the body, each lesion is to be looked upon as a focal one. The varying skin lesions, the arthritis, and the visceral symptoms may be explained on the supposition that exudates and diapedesis of varying proportions of plasma and the formed elements of the blood, occur together with varying local vascular dilatation and local tissue reaction. This process occurring now in one place now in another, is sometimes in proportion and of a nature to produce purpura and again to produce urticaria, oedema or erythema of the skin. An entirely similar process occurring in the joints produces arthritis while in the gastro-intestinal tract and kidneys it produces symptoms referable to those organs."

It has been suggested that an anaphylactic reaction is responsible for the symptoms. Positive evidence, however, is lacking. Skin tests with the various protein substances have not yielded the significant information in this group of cases that they have furnished in certain forms of urticaria. There is a rather striking resemblance of idiopathic purpura to certain cases of serum disease which are of a known anaphylactic nature. In serum sickness there is general urticaria and erythema, swelling and puffiness about the eyes and face, and there may be joint pains and crises of abdominal pain.

Osler[7] thinks that the pain in the abdomen is associated with a localized urticarial swelling of the gastro-intestinal wall and this condition has actually been found at operations made during an attack of colic.

Minot and Lee state that the walls of the intestines may become oedematous or markedly infiltrated with serous or sero-haemorrhagic fluid, being of the consistency and size of tough rubber garden hose. This thickening may produce obstruction partial or complete, or permit intussusception.

The relation of the kidney disorder to the disease is not clear, but the lesions would appear to be produced in a manner similar to those of the skin and intestinal tract. The oedema about the tubules would prevent proper functioning with the appearance of albumin in the urine while foci of haemorrhage would cause the haematuria. Christian[8] reports some ten cases of the erythema group with visceral disturbances. He thinks the haematuria could occur in the same way as does blood in the stool, from disturbances in the renal vessels. In one of his cases necropsy showed focal haemorrhages in the kidney without signs of nephritis. He goes on to say, "In how far these renal lesions are to be considered as acute nephritis it is difficult to say. In several of these cases there was markedly decreased renal function. Five of Osler's 29 reported cases died with what was termed uraemia. Whether this was nephritis or sup-

pressed renal function from oedema and haemorrhage in the kidney is not certain. The only necropsy in Osler's cases showed a proliferative glomerular nephritis. Some of the uraemic manifestations might easily have resulted from lesions in the brain of the same nature as those occurring in the skin and viscera and not have been actually uraemia."

The haemorrhage from the gastro-intestinal tract may be looked upon as focal. This is in contrast to our idea of the cause of haemorrhage in purpura haemorrhagica, haemophilia and haemorrhagic diseases of the new-born, in which we look upon the haemorrhage as depending chiefly upon some alteration in the blood.

There is not much in the literature concerning careful observations on the blood in idiopathic purpura. It is evident that the blood platelets are little, if any, reduced. The bleeding time is normal. There is no distinct change in the coagulation mechanism of the blood. The other morphological elements of the blood show little change from the normal. If there has been much haemorrhage the blood picture will be that found in any post-haemorrhagic anaemia. The white cells in mild cases are not increased, but in severe cases with marked abdominal symptoms the count is usually between nine thousand and fifteen thousand, but cases up to thirty-five thousand have been reported. Any increase in white cells is of the polynuclear neutrophils. Atypical marrow cells only appear if there is much anaemia. The character of the clot is normal.

Prognosis.—The prognosis is better in children than in adults. Among 102 cases[9] of Henoch's purpura, 8 resulted fatally, There is liability to recurrence of attack, but these usually cease at puberty. Renal complications are the chief cause of death, though deaths from cerebral haemorrhage, or localized cerebral oedema and intussusception have been reported.

Differential Diagnosis.—The occurrence in a child of purpuric spots, arthritic pains and visceral crises, especially if accompanied by melaena and haematemesis would render the diagnosis easy. The presence of abdominal crises suggests some of the various acute surgical conditions of the abdomen such as appendicitis and intussusception. When, however, purpura, urticaria, or oedema are present there should be no difficulty in the diagnosis. The greatest difficulty presents itself in children with colic, fever, leucocytosis, local tenderness and spasm without evidence of purpura, and the possibility of purpura should always be borne in mind in a child presenting these symptoms. The skin should be carefully inspected and careful inquiry made regarding any rash in the past. Intestinal obstruction is sometimes produced, and in such a case operation is indicated.

Cases with haematuria and renal insufficiency are to be distinguished from acute nephritis. This can usually be done by signs and symptoms present other than those directly referable to the kidneys. The cutaneous lesions might suggest serum disease but the history of serum administration would be absent.

Treatment.—The treatment is entirely symptomatic. The patient should be in bed and not allowed to sit up until all signs of haemorrhage have ceased and attendants should handle the patient gently. Physiological rest of the gastro-intestinal tract by a well regulated diet is is indicated. Fresh air is advantageous. Iron and arsenic tonics are indicated. Turpentine and sulphuric acid have been used with the idea of controlling haemorrhage. Henoch at one time used ergot but later gave up this practice. If anaemia is severe, transfusion is the rational treatment.

Case Report

Robert W., 5 years old, son of a farmer; first seen on the morning of July 29th, 1922.

History.—Five days ago the child was taken suddenly ill with abdominal colic and vomiting, both of which continued severe for two days. The mother thought that he had considerable fever. The bowels were constipated, but moved on the third day, with tarry stools, which became frequent and loose during the day. The vomiting continued, but less frequently, and it, too, now became dark in colour, evidently containing blood. On the fourth day the nose bled profusely and was controlled with difficulty. The urine at this time was noticed to be dark in colour, rather scanty, and was found to contain a large amount of albumin.

The past history was not important, and

there was no history of any similar condition occurring in the parents or other relatives.

The child was well developed, extremely pale and waxy in appearance, the lips and ears being very blanched. There was oozing of blood from the left nostril. The posterior pharynx was covered with blood. The teeth were good, the tongue coated, dark brown in colour but moist. The tonsils were not enlarged. Nothing abnormal was found in the chest. The respirations were 30, and the breathing was of the sighing type, with frequent yawning. The heart was normal in size, and there was a soft blowing systolic murmur heard over the base. The pulse was soft, of small volume, rate 120. The abdomen was full and boggy to feel. There was a very little general tenderness; no free fluid; liver and spleen not palpable. The reflexes were normal and brisk.

There were a few small purpuric spots on the lower part of the left leg, with a very few petechiae on the chest and right elbow and a few bluish spots on the thighs and one on the back, evidently the later stages of an earlier purpuric rash. The urine showed the following: dark straw colour, slightly cloudy, with abundant albumin, granular and epithelial casts and renal epithelial cells. No sugar; no red blood cells reported.

The blood presented the picture of an acute secondary anaemia; haemoglobin 20%, red blood cells 1,000,000, white blood cells 6,000, with microcytes, macrocytes and normoblasts. There was poikilocytosis and polychromatophilia. The platelets were not counted, but judging from the smear were not diminished. This would be expected in a case with such a marked secondary anaemia. The bleeding time was not prolonged.

The temperature was normal, and at no time during the course of the disease did it rise above 100° per rectum.

Fluids were given hourly; thirty ounces of normal saline were given subcutaneously and saline per rectum by Murphy drip was used. By the evening the bowels had moved three times with loose tarry stools. At eight p.m. the pulse had become more rapid and running. The child was more restless and had not improved, and it was decided to employ transfusion, using the father as donor—both bloods were found to belong to group 2. Dr. Moorhead gave the child 300 c.c. of the father's blood by the direct paraffin syringe method, and 60 c.c. of normal saline were also given intravenously; no anaesthetic was used.

The result was immediately apparent. The child's cheeks, ears and lips became definitely pink. There was no reaction, but about midnight the patient vomited a large amount of black fluid. From now on there was steady improvement. Tarry stools appeared once on the day after transfusion, and there was some daily abdominal pain with distension, but the child slept well and was in generally good condition. A second blood count on July 31st showed—haemoglobin 22%, red blood cells 1,240,000, white blood cells 9,000; and the spleen was now palpable. No fresh purpuric spots appeared at any time. There was occasional vomiting; the urine quantity was always above 36 ounces, with lessening amount of albumin and casts. The child became bright and happy and was discharged on August 11th. He was kept in bed till August 25th; at this time there was still a faint trace of albumin, but no casts. On September 1st the albumin had disappeared, and the blood showed: haemoglobin 80%, red blood cells 3,400,000, white blood cells 8,000. When next seen, on June 6th, 1923, he had grown four inches and appeared a normal child. He had had no further trouble.

The unusual features of the case were: (1) The extreme loss of blood and subsequent marked anaemia, which in our opinion might easily have proved fatal but for the transfusion; (2) No history or signs of joint pains; (3) Haemorrhage from the nose is also rather uncommon in this condition.

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DYSMENORRHOEA AS A RESULT OF DISTURBANCE OF FUNCTION OF THE ENDOCRINE GLANDS*

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DYSMENORRHOEA is of such vital importance to the health and comfort of so large a number of women that it is well worth careful study and discussion in the hope that we may get a clearer understanding of the cause of a symptom, which has been treated as a disease, and for this reason without much success. Dysmenorrhoea is generally defined as "painful menstruation." This definition is hardly full enough, for, usually accompanying the pain are a number of symptoms which are due to functional disturbances in remote organs, because the central and peripheral nervous systems also take part in the menstrual process. These disturbances occurring in the stomach cause indigestion, in the intestines give rise to diarrhoea or constipation, in the heart are followed by palpitation, and when they occur in the peripheral nerves of the head, result in headache.[1] The mental symptoms show themselves as a marked depression in some women and extreme restlessness and excitability, that is almost maniacal, in others. It is a notorious fact that most crimes for which women have been tried have been committed during the menstrual period. Menstruation should normally not be painful nor accompanied by physical or mental disturbances, and yet we all see a large number of women in which there is suffering and mental distress varying from marked discomfort to pain and despondency, which may be as great as that suffered by the average woman during her first confinement. Dysmenorrhoea is a condition that does not tend to right itself. It is so common that it is often regarded by some women as something that has to be simply put up with, and they consider themselves as less fortunate than their sisters who go through the period without pain or discomfort, and yet some of these women have to go to bed for two or even three days every month. Dysmenorrhoea is too often neglected. If it occurs in young girls, the parents almost invariably think it is due to the periods having not yet become properly established, and later, when it does not improve, that it will do so after marriage, and after this has occurred with still no relief from the pain and psychic disturbances, then they encourage the patient that following the birth of a child it will surely cease, and so the patient goes on until finally in desperation she consults a physician.

The number of classifications of dysmenorrhoea is legion. Let us simplify its classification by putting it under two headings:

(1) Those in which examination reveals gross pathological lesion or lesions in the pelvis, which may cause the dysmenorrhoea.

(2) Those in which examination shows an apparently normal pelvis.

We must, however, not lose sight of the fact that there may be signs of a previous pathological condition which may have been responsible for an endocrine disturbance while the latter is responsible for the dysmenorrhoea.

In a series of cases of dysmenorrhoea at the Mayo Clinic[2] 93 per cent of them were found to have apparently normal pelves. Since dysmenorrhoea with apparently normal pelves is found in such a large majority, I will limit this paper to the discussion of this class of cases only. This type has been attributed to endocrine disturbances. Now let us see how endocrine disturbances may cause it. Considered generally we may regard the ductless glands, through their hormones, as the regulating mechanism of the functions of the body. The following is Blair Bell's conception of their relation to the reproductive organs[3] "The ovary is concerned in the temporary

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function of reproducing the species and by its internal secretions of bending the metabolism of the body to this purpose. I do not believe that this organ influences the metabolism except in so far as this special function is concerned. On the other hand, the rest of the endocritic system is related to the genital functions in various ways. The thyroid, pituitary and adrenals influence the development and subsequently preserve the activity and integrity of the genitals. All the endocrine organs acting in harmony, control the metabolism in response to the necessities of the genital functions and in addition, they adapt the whole organism to the possibilities of the situation and regulate the secondary characteristics both physical and mental to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy the genital functions of the rest of the endocritic system cease and the re-arrangement of the metabolism that follows, produces the symptoms of the menopause. Contrariwise, insufficiency of the thyroid, pituitary, or adrenals, may cause cessation of the genital functions with atrophy of the uterus." One of the fundamental ideas that has been definitely accepted in recent years is the now common one that the various endocrine glands do not act by themselves individually, but by a correlation, through which, if one gland be affected, the others react very quickly in the endeavour to compensate the disturbance induced in the organism by the former. According to Sir Arthur Keith, individual differences depend upon the domination of one endocrine gland over another and the compensatory effort will be taken on by the particular gland that dominates the individual's physiology. If the individual physical differences are due to the particular gland which dominates the individual's physiology, we here have the explanation why some people are tall whilst others are short, some are stout and others lean, and it makes one wonder whether it would not be possible to develop any physical type of individual by the stimulation of the particular gland that is responsible for the type one wanted.

According to Henricus and Lieb[4] the myometrial motor nerve filaments penetrate the muscle sheaths and cause the normal rhythmical contraction and relaxation of the uterine muscle during the entire menstrual cycle and so keep up the normal circulation of the uterus. These contractions should be painless but if for any reason they become intensified they produce pain. The most common time at which intensification takes place is just before or at the commencement of the menstrual period. Improper hormonization will result in an overstimulation of these nerve filaments and so cause the painful hypertonic contraction or spasm of the uterine muscle especially at the cervix. This causes the peripheral blood vessels of the mucous membrane of the uterus to become engorged with resultant congestion and swelling which produces fairly profuse bleeding with clots, as well as the pain and discomfort. Now, how does this improper hormonization take place? To understand this let me remind you of the two important branches of the vegetative nervous system, that is, the sympathetic and the vagus or autonomic. The vagus supplies the lungs, heart, liver, pancreas and small intestines. The sympathetic supplies the large intestine, bladder, also the uterus and adnexae through the pelvic plexus. The vagus is the driving force whereas the sympathetic is the inhibiting one. Now the thyroid and pituitary stimulate the vagus, while the sympathetic is stimulated by the adrenals and ovaries.

Let us illustrate by means of a case just what happens when improper hormonization takes place. A young girl with sluggish or deficient ovarian secretion reaches puberty. Compensatory stress is thrown upon the suprarenals, pituitary or thyroid gland, depending upon which of these glands dominate the physiology of this particular patient. Let us say that the suprarenal is the one in this case; then it makes an attempt to supply this ovarian deficiency. Should it not succeed in this completely, there is no inhibitory action from these glands upon either the thyroid or the pituitary, and a hypersecretion from these latter is permitted to take place, which results in what is called a *vagotonia*. When one keeps in mind the organs supplied by the vagus, it is a simple matter to understand the symptoms which follow vagotonia. For instance, the effect on the stomach and liver produces nausea, or vomiting and epigastric pain or distress; on the heart, pal-

pitation is induced; on the intestines, diarrhoea or constipation; by its stimulation of the sympathetic, uterine colic or cramps. Should it also be necessary for the pituitary to help the thyroid to overcome this ovarian deficiency, we have added to the above symptoms, those which would follow from intracranial pressure, which is due to the transient swelling that occurs in the pituitary due to its hypersecretion, such as headache, which is characteristic in that it is usually bitemporal or supraorbital, or pain on top of the head, and also visual disturbances.[5]

This vagotonic state is practically always responsible for the pain and psychic disturbances found in dysmenorrhoea from endocrine disturbance, and is due either to a compensatory hypersecretion of the thyroid or pituitary or it may follow a compensatory exhaustion of the suprarenals or ovary. It may also be indirectly due to a hyposecretion of the thyroid or pituitary, or both together, and to find out which is responsible for it, is a comparatively simple matter, as each gland shows a fairly definite type.

As we said before, compensatory reactions are expressed first through the gland that dominates the individual's physiology, therefore, in thyroid types the thyroid responds first; in pituitary types, it is the pituitary, and so on. In mixed types, the predominant gland is the one that responds first. (The combinations most common are pituitary with adrenal, adrenal with thyroid, and thyroid with ovary). Therefore, after deciding which is the dominant gland in the particular patient we look for distress symptoms from it. The thyroid dominant type is the highly neurotic, emotional type of woman. The adrenal type is energetic, highly aggressive, dominating, and has marked overgrowth of hair. The pituitary type is broad shouldered, with coarse features. She may also be stout, drowsy, lethargic and dull. The ovarian type is tall, slender and artistic.

When the patient shows an enlargement of the thyroid with slight signs of hyperthyroidism at puberty or with each menstrual period, with dysmenorrhoea, one must satisfy oneself whether this enlargement is due to a physiological or pathological hypertrophy. (If physiological, it is due to either ovarian exhaustion or deficient ovarian development). A careful history will soon settle this question. Where there is profuse and prolonged bleeding at the menstrual period with the dysmenorrhoea, then the condition is probably due to a pathological hypertrophy although one must keep in mind that the continued hyperthyroidism by persistently increasing ovarian activity will cause a tiring of the ovary with a diminished secretion of it, and so in the later stages we get scanty menstruation or even amenorrhoea, for months at a time. If in the early stage of the thyroid enlargement there is scanty menstruation, or long delayed periods with the dysmenorrhoea, the enlargement is then due to the effort on the part of the gland to augment insufficient ovarian secretion and is therefore physiological.

Thus far we have considered dysmenorrhoea as a result of ovarian or adrenal insufficiency with compensatory hyperthyroidism and hyperpituitarism. Let us now consider the dysmenorrhoea which may be due to a deficiency of either pituitary or thyroid secretion. These usually go hand in hand, for deficient pituitary by depriving the thyroid of its functional impulses reduces the activity of the thyroid.[6] This deficiency permits an overaction of the ovarian and adrenal secretions which for a time produces a sympatheticotonia; but later these latter glands tire out and so not being able to inhibit even the diminished secretion that comes from the pituitary and thyroid, a secondary vagotonia is produced. Where the dysmenorrhoea is due to a thyroid deficiency we will usually find that puberty has been delayed not only in the establishment of menstruation but also in the development of secondary sex characteristics. We may have secondary amenorrhoea for months at a time, or scanty menstruation. There is also a lack of energy, deficient sexuality, mastodynia (very painful breasts at the menstrual period), increase in weight, and an increased fondness for sweets. There will be found deficiency of the eyebrows at the outer margins, chilliness and subnormal temperature, coldness of the extremities and sensitiveness to cold; also fatigue on slight exertion. The skin is coarse, dry and rough. In pituitary deficiency there is always scanty menstruation or markedly delayed periods; also increase in weight, the skin on the other hand being fine and smooth. The pulse is slow, the

blood pressure is low, and the mental attitude is sluggish with a tendency to somnolence. From this it is seen that the clinical picture is not unlike that found in hyperthyroidism, and the differential diagnostic feature is the skin.

Causes of endocrine abnormalities.—(1) They may develop after any of the diseases of childhood; (2) In consequence of severe chilling; (3) Chronic debilitating diseases; (4) Physical or mental shock, including major surgical operations; (5) Prolonged lactation; (6) Too frequent pregnancies; (7) Chronic cardiac lesions; (8) Overwork and underfeeding; (9) Too much strain, monotony or depression; (10) Morphine and lead poisoning.

Treatment.—Of prime importance in the treatment of dysmenorrhoea due to endocrine disturbance is accurate diagnosis. First to be quite satisfied that there is no gross pelvic pathology underlying it, and second, to find the particular gland or glands that are responsible for the disturbance. Then whether there is a hypo-secretion, hyper-secretion, or dysfunction of one or several.

Then one must keep in mind the fact that organic extracts are marketed as so many grains of either the fresh gland, or so many grains of the dessicated gland. This makes a very marked difference in the dosage as one grain of the dessicated is equivalent to five grain of the fresh gland. There is also a difference of opinion as to whether one should use the whole gland of the ovary or only parts, such as the corpus luteum or the residue, and the same applies to the pituitary, that is, the anterior, posterior, middle lobe, or the whole gland. We have been using the whole gland of both of these and the dessicated extract of all.

Where there is a deficiency of ovarian secretion, ovarian extract (dessicated) in five grain doses three times a day is given continuously over a period of two or three months. Ovarian extract is also of value in the dysmenorrhoea where there is a hyper-pituitarism. This relieves the strain on the pituitary, it reduces the vagal stimulation, and also lowers the heightened blood pressure found in these cases. It is also useful in the physiologically overactive thyroid especially in the early stages with symptoms of mild hyperthyroidism. The ovarian extract supplying the deficiency of ovarian secretion soon causes the thyroid to come back to normal. When the compensatory increase of the thyroid secretion continues till there is exhaustion of the thyroid gland, it will be found that the giving, say, of one quarter to one half a grain of thyroid with the ovarian extract will give excellent results.

Where the fault lies in a deficiency of either the thyroid or the pituitary, the exhibition of these glands is indicated. In the administration of thyroid we are usually very careful as unpleasant effects have been noted from too large doses of this gland. We start with one quarter of a grain three times a day for a week, increasing by a quarter of a grain each week until half a grain is taken three times a day. If the pulse rate is below 90 with no relief of the symptoms then one can continue increasing till relief is obtained or the pulse rate goes over 90.

When giving pituitary extract for this condition, usually the whole gland is used and given in two grain doses three times a day.

Where physical or mental shock, or prolonged illness predisposed to the dysfunction, the patients usually show suprarenal exhaustion, with deficiency of adrenal secretion following. Here adrenalin, followed by strychnine, have been found to give good results.

Summary and Conclusions

1.—Dysmenorrhoea is only a symptom and not a disease.

2.—It is of vital importance to the health and comfort of 50 per cent. of all women.

3.—The definition of it should include all those symptoms resulting from disturbances in remote organs, because the central and peripheral nervous systems also take a part in the menstrual process.

4.—It is a condition that does not tend to right itself and is altogether too often neglected for a long time.

5.—Simplifying its classification under the two headings of those with gross pathological lesions in the pelvis, and those without, should help considerably in the intelligent treatment of it.

6.—Endocrine disturbance resulting in vagotonia is by far the most common cause of dys-

menorrhoea without gross pathological lesion in the pelvis.

If this paper will stimulate physicians to make a more careful and complete diagnostic study of this very common condition, which is of such importance from an economic aspect, as well as to the health and comfort of such a large percentage of women, then I shall be amply repaid for whatever effort has been expended.

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KIDNEY DISEASE FROM THE VIEW POINT OF THE BIOCHEMIST*

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YOU have listened to a discussion on the various phases of kidney diseases, and in the few minutes at my disposal I propose to direct your attention to the invaluable information derived from the laboratory tests, which have special reference to the chemical analysis of the blood for retention products; tests which, if not now possible everywhere, are rapidly becoming available to all, and which I believe are essential to a practical knowledge of kidney disease. This is evidenced by the increasing attention given them in current medical literature.

I need say little here regarding the ordinary routine urinalysis. Its value is known to all. There is just one note of warning, which should be sounded. Albumen and casts are evidence of actual kidney disease but not of kidney function; and one has seen cases in which there was practically no albumen, and casts were found only with great difficulty, and yet coma followed by death was the early outcome.

We have, however, a very good means of estimating kidney function and that is by repeated estimations of the specific gravity. The simplest and best routine is that of the 24 hour test, in which the patient on ordinary diet with no fluid intake between meals, collects samples of urine every two hours during the day and a twelve hour specimen at night. The specific gravity should show a variation of at least 9 points, and the night specimen should attain a height of at least 1018 if the kidney function is efficient. If the kidney cannot concentrate to this extent; if the specific gravity is low and fixed, and if there is as much urine at night as during the day, then we know that we have to deal with kidneys whose function is materially impaired.

For further elaborations of this test we have the concentration test and the water test, both very valuable, but, like the Mosenthal test meal for kidney function, more difficult to carry out in private practice, and consequently seldom used. In this paper we will confine ourselves to tests which give the most information and which are easily performed.

Perhaps the most popular, as well as the most simple means of estimating renal function is by the phenolsulphonephthalein test, which is so well known that I need spend no time in describing it. If there were more time, I would like to show with figures from clinical as well as experimental material, that although this test gives results that parallel those of chemical blood analysis, it does not tell us whether the kidney is able to cope with a situation involving strain. That is to say, case after case can be shown where an operation was indicated but the phenolsulphonephthalein elimination was practically zero and practically prohibitory of operation. On chemical analysis, however, it was found that there was no actual retention in the blood of objectionable products; the operation was proceeded with, and normal recovery followed. This test has its limitations and blood chemistry methods give much more defin-

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ite information of the ability of the kidney to handle a load, and should be utilized when necessary.

What are the constituents of the blood for which the kidney is responsible? The chief of these are uric acid, urea and creatinine.

Uric acid is an end-product in the metabolism of nucleoproteins. It is very insoluble and as the kidney has great difficulty in getting rid of it, uric acid is the first product which with chronic damage to the kidneys will tend to increase in the blood above the normal amount of one to three mg. per 100 c.c. Here we might note that it is increased in early nephritis, lead poisoning, and gout, but not in rheumatic conditions.

When a protein is utilized by the body to provide energy, the amino or nitrogen radicals are grouped together into urea and eliminated by the kidney as such. The amount in the urine from time to time during the day varies according to the intake of food, but the level in the blood remains practically the same, *i.e.*, 12 to 15 mg. per 100 c.c.

Creatinine is a substance formed within the cells of the body in constant quantities at all times, and it is eliminated by the kidney with great ease, so that it is only in the very badly damaged kidney that there is retention of this substance. The normal level is 1 to 2 mg. per 100 cc.

Disease	*Non-protein nitrogen*	*Urea nitrogen*	*Uric Acid*	*Creatinine*
Normal*	25–30	12–15	1–3	1–2.5
Gout			3–10	
Chronic nephritis	30–80	15–50	1–4	1–3
Uraemia	120–350	70–300	4–15	4–34

At this point I might explain that many writers speak of an abnormal percentage of urea nitrogen, while others speak of a high non-protein nitrogen. The non-protein nitrogen is the total nitrogen in urea, uric acid, and creatinine, and being estimated by a simpler test than that for urea or uric acid, its estimation is rapidly becoming more popular than the estimation of other substances.

*The figures represent milligrams per 100 c.c.

Of what use are these tests and figures? We must not forget that one third of one healthy kidney is sufficient to take care of the waste products of the body, and it is only when we have less than that amount that a blood analysis will show any variation from the normal, so that long before this stage is reached urinalysis must be relied upon. Therefore, when we find any increase in the non-protein nitrogen in the blood we know that we must have a seriously deranged kidney.

One fact has been of great value to me, namely,—if the kidneys can concentrate up to 1018 and can eliminate a fair amount of water, we need not worry about retention. The estimation of the creatinine is by far the most useful and definite test we have. Creatinine being very readily eliminated by the kidney, when the percentage gets above normal the situation must be grave, and when it rises above 5 per cent. the patient will probably die in a few days to three months.

To illustrate:—A man, apparently in good health, commencing a vacation showed no albumen or casts in his urine, but his blood showed urea 97, uric acid 6.6, creatinine 17.5 mg. per. 100 c.c. On account of these findings he was sent to hospital, and in spite of treatment he rapidly got worse and died 25 days later.

Blood chemistry gives us a convenient method of differentiating cardiac and renal disease, which is of very great importance in treatment, for some drugs used in renal conditions might be fatal in cardiac ones. Here are conditions which often, on account of their clinical similarity and difficulty of management, are only finally diagnosed at the autopsy table, but which can be definitely grouped by means of blood chemistry.

A case in illustration is the following: A man aged 52, salesman, complained of pain in the stomach, dyspnoea on exertion, palpitation, occasional slight oedema of the ankles, loss of weight, nocturia; all of which had become increased during the last 5 months. Past history: diphtheria, mumps and tonsillitis, frequent attacks of weakness, vertigo, headache and nausea. Family history: father and brother died of nephritis. Examination: heart enlarged; blood pressure: systolic 230; diastolic 138. Eye grounds showed haemorrhagic retinitis. Urine, negative except for a large amount

of albumen. X-ray of gastro-intestinal tract negative. This case was demonstrated as one of essential hypertension, with a fair prognosis, but later a blood analysis showed: urea 44, uric acid 5.1, creatinine 6. On account of the high creatinine the diagnosis was changed to interstitial nephritis with a very bad prognosis.

Blood chemistry has also its place in surgery. Before operating on a patient with genito-urinary disease one should know something of the capabilities of the kidneys. Most of our information is obtained from an examination of the urine and the phthalein test, but at times the latter is not practicable or gives a very poor result, leaving us in doubt as to the advisability of operating. A blood analysis, however, will tell us whether the kidneys are capable of meeting the demands upon it, for if not there will be retention of the products of metabolism. For example, M. J. was sent to hospital with a hypertrophied prostate and vesical calculus. He was semi-conscious and unable to give a history. He hiccoughed constantly, and there was a uraemic odour about him. The prostate on examination was found to be enlarged; a stone-searcher showed a stone in the bladder, the residual urine was 2 oz.; blood pressure, systolic 180, diastolic 135. Urine: albumen, hyaline and granular casts. Pulse 100 to 130. Phenolsulphonephthalein test showed 2% excreted in 2 hours. Blood examination showed urea 291, creatinine 2. One week later the blood examination was urea 188, creatinine 1.7. The bladder was opened under local anaesthesia, the urea dropped steadily until it was 42 mg. per 100 cc. and the creatinine was 0.75. This patient underwent a prostatectomy successfully, and made a good recovery. With the phthalein test alone, the case appeared hopeless, but the blood creatinine gave a good prognosis in spite of the high urea percentage.

Blood chemistry does not afford a complete solution to all our difficulties, because its usefulness is limited to advanced cases. But when functional tests show considerable damage; when doubt exists as to whether the case is renal or cardiac; when information is desired regarding the kidneys, in cases where control of the patient for tests of the simpler kinds is impossible, then a chemical blood analysis furnishes information that is straightforward and definite, and which is of immense value both in prognosis and treatment.

With regard to writing, I have seen men, colleagues of my own in the surgical profession in Dublin, dictate without note or reference work of importance of unsurpassed language and without previous thought. To others like myself, writing is a grind, a difficult, laborious task, and yet there have been great men like Swift who must have experienced the difficulties of humble contributors, for he gives the following advice to those about to write papers:

"Blot out, correct, insert, refine"
"Enlarge, diminish, interline"
"Remember when invention fails, to scratch your head and bite your nails."

Books and the printing press have accomplished wonders in helping forward the surging throng in search of truth. Journal literature and monographs are the literary rocks on which workers in medicine and surgery should be content to stand. Text books fall by making mountains out of molehills and persisting in the retention of unwieldy classifications and bewildering names. I have come across students in their final academic year who by misdirected diligence in the lectures and libraries were left uncertain where anaphylaxis and prophylaxis were medical terms or the pet names of Russian and Grecian generals.

With regard to speech making I have little to say. It is a forcible means of propaganda. If used fairly it is a power for good, but in the hands of some may be the means of far-reaching mischief. I have read somewhere that the faculties of speech and speech-making are essentially diverse. By the one you make yourselves intelligible, and by the other unintelligible to your fellow beings, and he adds in addition, speech-making is one of the greatest of American institutions.

A CASE OF PERSISTENT ACIDURIC INTESTINAL FLORA IN MAN

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SINCE the investigations of Metchnikoff, some twenty years ago, on the control of intestinal putrefaction by the implantation of an aciduric bacterial flora in the intestine, much work has been done. Successful implantations have, however, only recently been effected[1]. This has been accomplished by modifying the diet, particularly by the introduction of considerable milk, lactose or dextrine and by feeding *B. acidophilus* instead of the similar B. *bulgaricus* used by Metchnikoff and other earlier workers. Yet the implanted acid-forming bacteria have been found to predominate in the intestine only as long as the milk, lactose or dextrine-rich diet is maintained.

It is of considerable interest, therefore, to find a man, on an apparently ordinary mixed diet, who has never taken *B. acidophilus*, as far as he knows, with an intestinal flora entirely of aciduric organisms. *B. coli* and other gas-formers are absent, the only viable species observed being *B. acidophilus* and a few yeasts.

This man, a baker, thirty-six years old, had enjoyed good health until he developed malaria and dysentery while serving as a baker in 1916 with the British Army Service Corps in Salonica. He was in hospital in Salonica and in England for six months. In 1918 he was with the Canadian Infantry in France. During the greater part of the latter period he was troubled by frequent stools and occasionally diarrhoea. In 1920 he was for four months in a Canadian Soldier's Civil Reestablishment hospital suffering from a chronic dysentery. Since that time he has been at work as a baker. For these three years he has continued to pass four to six stools per day, a total of 500 to 1000 grams. He appears to be in reasonably good health, but complains of becoming easily fatigued and occasionally suffers considerable exhaustion after his stools.

There is no available record of the bacteriology of his dysentery—either in the acute or the chronic attack, or of his general intestinal flora—until the present study. For the past three months his faeces have been examined every week or ten days. All the samples have appeared to be alike and have exhibited the same flora. The stools have always been semi-solid, partially formed, dark in color, and microscopically do not appear to contain digestible material as muscle fibres, starch, or vegetable cells other than cellular elements. The odour of fatty acids, particularly acetic acid, predominates without any suggestion of the presence of products of putrefaction. The reaction has always been acid, pH 5.0 to 6.0 with an average of pH 5.5. This corresponds with the maximum acidities observed by Rettger and Cheplin (1921) in the stools of patients fed on large amounts of *B. acidophilus* milk and maintaining a practically pure *B. acidophilus* intestinal flora.

Direct smears of these stools show Gram-positive rods 2 to 5 microns long with rounded ends, occasionally in short chains, amounting to ninety to ninety-five per cent; budding yeasts five to ten per cent., and an occasional coccus. The absence of *B. coli* and other gas-formers was shown by the fact that glucose and lactose broth heavily inoculated with the stool always failed to develop gas. Neutral or alkaline agar inoculated with the stool gave no growth or an occasional colony of staphylococcus. Acid agar or whey agar (pH 6.5) always gave an abundant growth of the Gram-positive bacilli and the yeasts.

The Gram-positive bacilli on whey agar produce small grey to colorless colonies with regular or slightly fimbriate margins. Milk is acidified and forms a smooth semi-solid coagulum in twenty-four to thirty-six hours, the time depending upon the initial pH of the milk. Acid was formed in broths containing the following sugars: raffinose, arabinose, sucrose, maltose, lactose, glucose and mannite and with dextrine. Starch and inulin were not fermented. No gas was produced in any of the carbohydrates

tested. From these observations it may be concluded that this organism belongs to Rahe's[2] (1918) group A, *B. acidophilus*.

Feeding milk cultures of this organism to white mice resulted in its establishment in a period of two to three days, in the intestine with the complete, or almost complete, exclusion of the forms previously present. Returning the animals to a lactose-free diet, however, resulted in the almost complete disappearance of the *B. acidophilus* in about the time required for its establishment.

No satisfactory explanation of the apparent spontaneous maintenance of this organism to the exclusion of the more ordinary intestinal flora is apparent. The man states that he consumes considerable amount of bread and buns which would result in the formation of dextrine. It seems unlikely, however, that he eats a great deal larger proportion of dextrine or dextrine-forming foods than many who support a more ordinary intestinal flora.

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LESSONS FROM THE WINDSOR OUTBREAK OF SMALLPOX

REPORT FROM THE PROVINCIAL BOARD OF HEALTH, ONTARIO

THE recent epidemic of smallpox in Windsor and its vicinity has been of a particularly virulent type. The symptoms have been so irregular in character that some of the lessons learned may be of interest to the medical profession generally, and especially to medical officers of health.

History of the Epidemic.

The facts concerning the epidemic are briefly as follows:—A mild epidemic of smallpox had been present in Detroit for the past three or four months. Owing to the proximity of the Border Cities it was inevitable that cases of smallpox should appear in Windsor and other neighbouring municipalities in Ontario. Some cases developed as expected in the Border Cities, but they were of a mild character, occasioned no alarm, and were promptly dealt with by the Health Department. An epidemic of malignant smallpox, however, broke out in Windsor about the middle of February, following the death of a man suffering from an irregular type of haemorrhagic smallpox. This man during his illness, was seen by several medical men of the highest reputation, but no one believed that the patient was suffering from a communicable disease. During his illness the man was visited by many friends and relatives and when death occurred his funeral was very largely attended. It was only when cases occurred in persons who had been in contact with this man that the diagnosis of smallpox was definitely made. These cases were of a particularly virulent and irregular type.

Number of Cases and Deaths.

The number of cases of smallpox in Windsor up to March 3rd was over 40; the number of deaths was 12.

The total number of cases in Windsor, Amherstburg, Maidstone and surrounding districts from the middle of February to March 3rd was 60, the total number of deaths in these places was 18. The total number of cases apparently due to the undiagnosed case of smallpox had reached 42.

Source of Infection of Original Case.—It has so far been impossible to determine the source of infection of the original undiagnosed case. It may have been a mild type from the Detroit epidemic which suddenly took a particularly virulent form, or possibly an unrecognized case from the northern part of the province where irregular types of smallpox are often seen. Whatever its source, the cases have all been of a very virulent form with a very high mortality.

Interesting Points.

The following points are of interest in connection with the epidemic.

1.—The first unrecognized case undoubtedly was a case in which there had been a sudden increase of virulence in the type of the disease. It is probable that this was due to the fact that the person affected had never been vaccinated. As is well known, this has been predicted by medical men who believe that a mild type of smallpox was at any time likely to become more severe in character in an unvaccinated population.

2.—The irregular character of the prodromal symptoms and of the rash.

Some of the cases gave no history of backache which is a common symptom; others complained of very severe pain in the back and were only relieved by extremely large doses of morphine, hypodermically. Some cases complained of severe headache. All had moderately high fever and vomiting. Sore throat was a frequent symptom. The cases may be divided into three groups.

(a) Mild cases in individuals with a history of an old, successful vaccination over 12 years ago, also an occasional unvaccinated case who had been infected in Detroit.

(b) Severe semi-confluent and confluent cases—all in unvaccinated persons—some of these cases have already died and others are seriously ill. These cases live as a rule 6-8 days and if they survive that length of time, recover.

(c) Haemorrhagic cases—these were all in unvaccinated persons and were all fatal. These cases were very difficult to diagnose even with the information that an epidemic of severe smallpox was present. Some were at first diagnosed as appendicitis; others, stone in kidney, and still others, scarlet fever and measles. Some of the haemorrhagic cases showed a typical "lobster rash" as mentioned by Ker in his book on Infectious Diseases; others somewhat resembled the rash of scarlet fever though it was of a more dusky character and no other symptoms of scarlet fever were present. Still others showed a rash like measles, but the other symptoms of measles such as dry cough, running eyes, and cold in the head, were absent.

All of these rashes were, of course, prodromal rashes, and in many cases the true smallpox rash was not seen owing to the patient's early death. Haemorrhage into the conjunctivae was a common symptom in these cases; also haemorrhages from the mouth, bowel and bladder, as well as haemorrhages under the skin.

3.—Severity of the epidemic and the value of vaccination. The Medical Officer of Health of the Border Cities says: "this is the most severe epidemic of smallpox in Canada since the 1885 Montreal epidemic, and the deaths among the unvaccinated persons suffering from the disease will run 50%." He also says "the value of vaccination as a means of prevention has been proved as never before."

4.—The value of compulsory vaccination of school children. The value of a by-law providing for compulsory vaccination of school children on entering school was shown and undoubtedly in this epidemic prevented the spread of the disease among children.

5.—The severity of the disease and the high mortality rate rendered it possible to vaccinate a large proportion of the population of the Border Cities. Roughly two-thirds of the population of the Border Cities or 50,000 people were vaccinated during the last week of February. There has probably never been a city which has been able to accomplish such a feat without the use of compulsory methods. The severity of the disease and the confidence of the people in the local health authorities undoubtedly made this possible.

Action by Local Boards of Health.

Local Boards of Health are urged to adopt the following measures whether smallpox is present in the municipality or not:—(a) Urge general vaccination of the public. (b) Have the local Board of Health require compulsory vaccination of all school children before admission to school. (see Vaccination Act, Sec. 13.) (c) Notify medical practitioners to be on the watch for irregular cases of smallpox (especially cases of the haemorrhagic type). (d) Arrange for a supply of free smallpox vaccine from the Provincial Board of Health.

Since the above report was written, there have been two more deaths in Windsor.

The number of cases in Amherstburg was 17 and the number of deaths 10. (All of these cases were cases which developed from contact with a case in Windsor).

The number of cases in South Sandwich (Maidstone) was 10, while the number of deaths was 5. (All of these cases are also due to contact with a case in Windsor).

Case Reports

TWO CASES OF ARTHRITIS SIMULATING ACUTE RHEUMATIC FEVER COMPLICATING PNEUMONIA

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Arthritis as a complication of pneumonia is not a common condition. Ordinary text-books devote little or no space to this condition. Rufus Cole[1] writing on lobar pneumonia describes the occurrence of an arthritis as a rare and grave complication. Cramer and Piotrowski[2] in their series of 1465 cases report arthritis as a complication in only 8 cases. Five of these were monoarticular, 3 polyarticular and 5 were purulent. The mortality was 50%.

Migratory arthritides of the acute rheumatic type are very rare indeed. Seeing two cases within five months, curiously enough in brothers, I looked up the subject. I found an account by David Greenberg of New York who reports a case similar to mine. He says, "The joint manifestations ran a clinical course similar to an ordinary attack of acute articular rheumatism; and the migratory tendency of the joint involvement was very decided. Within a week after the first appearance of the arthritis both ankles, both knees, both elbows, the left hip, left shoulder, the left first and right second metacarpophalangeal joints had been involved. Also there seems to have been a decided shortening of the usual acute course of the lobar pneumonia. There was a drop in temperature coincident with the appearance of articular symptoms, although there was no change in the physical signs in the lungs at that time.

My own case resembles this one fairly closely. The patient, a boy of twelve years was first seen on the third day of his illness. For the first twenty-four hours he complained of general malaise, and of having a cold in his chest. The next day he developed severe pain in the right chest with painful and difficult breathing. I saw him the following day when he made the same complaints. Examination showed a pale, undernourished boy whose breathing was rapid and labored. There was dilatation of the alae nasi and cyanosis of the lips and finger nails. Resonance was impaired with distant blowing, breathing, bronchophony and râles over the right lower lobe. The temperature was 103.2, pulse 120 and respirations 32. Examination was otherwise negative. He was put on the usual treatment with small doses of codein for the pain and as the pulse was not of a good quality, he was given tincture of digitalis in five minim doses four times a day.

On the following day a patch of herpes was observed on the upper lip. Otherwise his condition was much the same. During the next two days he remained about the same, excepting that he ceased to complain of the pain in his chest. The temperature ranged from 102.5°F. to 104°; pulse from 120 to 130, and his respirations from 30 to 40 per minute.

On the fifth day of his pneumonia he looked very ill. He was dull, listless and apprehensive. He complained of severe pain down his right arm but examination did not show anything abnormal. The signs in the chest remained as before. T. 103.4°, P. 130, R. 36.

The next day he was markedly changed. He was bright and optimistic. His temperature had fallen to 99.2, the pulse to 104, and his respirations to 24. There was no cyanosis or dyspnoea. The signs in the chest were as before. The chief complaint now was of pain in his right shoulder. This was reddened and swollen. The digitalis was discontinued and he was given sodium salicylate in ten grain doses every four hours.

Seventh day. The lad complained of pain in right wrist, and in both ankles which were swollen and inflamed. The right shoulder was painful on movement only. The signs in the chest were less marked. Temp. 99.2°, pulse 104. Resp. 18. *Eighth day.* Right hip red, swollen and painful. No other complaints. *Tenth day.* Slight discomfort on movement of right shoulder; other joints normal. The chest was negative excepting for a few râles over right lower lobe. Temp. 98.3°, Pulse 80, Resp. 18. *Twelfth* day. No complaints. Patient convalescent. From then on the patient made an uninterrupted recovery.

The second case was that of his brother aged 9 years. This case occurred five months before mine and was under the care of my associate, Dr. F. L. McCarroll. This boy's illness started with a broncho-pneumonia. He was very ill for a week before the development of the arthritic symptoms. He then had a migratory, non-suppurative arthritis involving almost all the large joints and lasting for a period of four weeks. The pneumonia showed an immediate improvement with the onset of the arthritis and cleared up rapidly. The arthritis benefitted from the administration of the salicylate, but did not show the same satisfactory response that was seen in my case. The child made a complete recovery.

Two other children in the family have had acute rheumatic fever so there is a decided rheumatic tendency in the family. One wonders if these cases are purely a pneumococcus infection or if we may be dealing with a mixed infection. Also why one case should have shown such a good response to salicylate and not the other.

One cannot draw very much in the way of conclusions from two cases but it is interesting to note that these cases do occur and that the salicylates are of benefit in the treatment. The prognosis in this type would seem to be better than in ordinary arthritis following pneumonia, for the onset of the arthritis was associated with a definite improvement in the pneumonic condition, and followed by complete recovery.

There are no signs of any cardiac involvement in our two cases, nor any sign of other permanent damage from the arthritic symptoms.

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(1) *Nelson's Loose Leaf Medicine,* Vol. 1, page 245. (2) *Survey of Literature* following page 276. (3) *Nelson's Loose Leaf Medicine,* Vol. 1., page 4, Sept., 1920 to March, 1921.

FRACTURE OF THE CLAVICLE, ACROMION PROCESS AND SURGICAL NECK OF THE SCAPULA

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Some years ago a young man was brought in suffering from a fracture of the clavicle at the junction of the outer and middle thirds, with a fracture of the acromion process, and a fracture of the surgical neck of the scapula, all caused by falling out of a tree.

To keep the broken bones in apposition by any method of strapping or bandaging was impossible, but I found that by placing the patient on his back and drawing the arm of the injured side outward until it was at right angles with the body, the bones practically adjusted themselves when traction was made by grasping the outstretched hand. The bony supports having been broken, displacement was caused by the weight of the arm and the muscular contraction and as soon as the downward drag was removed and the muscular contraction overcome, displacement disappeared. It then appeared evident that the problem of treatment would be solved by keeping the patient on his back with his arm extended and making traction by a pulley and weight attached to adhesive straps one on the back, the other on the front of the arm and forearm.

The result in this case appeared to be so nearly perfect and the means used so simple that I no longer advise any other line of treatment in such cases. It is too often found that after the arm has been kept bound to the side as in the Sayer or Velpeau methods with their various modifications there is great difficulty in raising the arm, and this condition may be permanent, but in any case the result can hardly be regarded as ideal when the bone is healed in six weeks and it takes six months more to get the proper use of the part. It is also to be noted that whereas most cases treated by the various strapping, bandaging, and padding devices recover with more or less deformity as well as impaired function, under the method above described there is practically no deformity, and, consequently, restoration of function is complete.

Having found this method so satisfactory in a most complicated and difficult case, I have since adopted it in all suitable cases of fracture either of the scapula or the clavicle. Straps, bandages, and pads will stretch or slip, but even if they remained immovable they cannot be applied so as to hold the fragments in apposition and prevent deformity.

Regarding the direction in which traction is to be made, it is sufficient to say that, in gen-

eral, it should be in a line through the centre of the two glenoid cavities of the scapulae to be varied as required to meet the indications of each case; that is, the direction should be such as will restore the fragments to their normal positions and keep them there.

As the patient tends to be drawn in the direction of the traction it is well to raise the side of the bed thereby making his body act as a counter weight.

In cases of dislocation of either end of the clavicle it is difficult if not impossible to secure a reasonably good result by any of the means at present employed because there is no way of holding the dislocated end in place by strapping or bandaging.

The difficulty can be overcome and an almost perfect result obtained by treating the case by the same method as used in fracture of the surgical neck of the scapula. The patient is kept on his back and on the extended arm traction is made by means of a weight and pulley in such a direction as will keep the dislocated bone in its normal position.

Keeping a patient in bed for what is often considered a minor injury is irksome but the end justifies it, for in no other way can the above mentioned injuries be treated so as to insure perfect functional and cosmetic results such as the surgeon desires and the patient expects.

The War on Quacks.—The Department of Health of the City of New York has published a list* of the titles under which various quackeries are practiced, as follows:—"Aerotherapy"; "Astral" healers; "Autothermy"; Beautifier Establishments; "Biodynamo-chromatic" therapy; "Blood" specialists; Bone setters; Cancer "cures"; "Chromo-therapy"; "Christos" (blood washers); Christian Science; "Chromopathy"; "Coué ists; Diet-therapy; Diathermy; "Drugless healers"; Electrotherapy; Electrotonic methods; Electric light diagnosis; "Electryonic" methods; "Electrohomeopathy"; Electronapro-therapy"; "Geotherapy"; Hypnotist; Hydro-therapy; Herbalist; Helio-therapy; "Irido-therapy" diagnosticians; Kneipp cure; "Leonic" healers; Mental and spiritual healing; Medical gymnast; Mechano-therapy; "Naturologist"; "Natureopath"; "Neuro-therapy"; "Naprapath"; Optical Institutes; Obesity curers; "Phycho-analyst"; Patent Medicine Men; "Photo-therapy"; Physical culture; "Physiotherapy"; "Psycho-therapy"; "Practo-therapy"; "Quartz-therapy"; "Spondylo-therapy"; "Sani-practor"; "Spectrocrome"; Special food faddists; Special drug faddists; "Spectro-therapy;" "Tropho-therapy"; "Telethermy"; Vacuum and serum "cures"; "Vitopath"; "Zodiac-therapy"; "Zonet-therapy."

Objection has been made by some to the inclusion in this list of Christian Scientists, Coué ists, and psychoanalysts, and the department has issued a statement claiming that this was a mistake.

*Weekly Bulletin, N. Y. City Dept. of Health, Feb. 16, 1924.

Studies on Iso-agglutinins in the Blood of the New-Born.—Bruno de Biasi, New York, asserts that mothers may act as donors for their new-born infants without compatibility tests for agglutination and hemolysis. If tests are contemplated, the cross-agglutination test should be the one of choice so as to prevent the rejection of the mother donor in case she is found to belong to an incompatible group. Proof is given that the corpuscles of the new-born infants have their quota of receptors. This is shown by the fact that in all of the 100 cases, the new-born babies have been grouped successfully according to the Moss classification. Successful transfusions done at Harlem Hospital, using mothers who, when grouped, were found to belong to groups incompatible with those of their respective new-born infants, demonstrated practically that mothers may be used with impunity without any danger whatsoever.—*Jour. Am. Med. Ass.*, Nov. 24, 1923.

Retrospect

NOTES ON THE CLINICAL SIGNS OF INFANTILE RICKETS AS OBSERVED IN VIENNA*

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All recent clinical investigation has emphasized the difficulty of establishing a standard for the diagnosis of rickets. Moreover when signs are definite the stage of the disease is difficult to determine and for this x-ray plates are almost essential. Cases are frequently seen, in young infants, where marked clinical stigmata are associated with an x-ray picture showing the bone lesions nearly healed.

In the Vienna experience, which was concerned exclusively with infants under 18 months, craniotabes, beading of the ribs and cranial bossing proved the most reliable signs of early rickets.

Craniotabes is by most writers believed to be a rachitic change. Holt and Howland state that it occurs in infants under six months of age; that it is a rachitic manifestation, and depends in no wise upon syphilis. Hess and Meyer (1922) are of the opinion that on account of the many qualifications with which it is attended, craniotabes must be regarded as an unreliable sign of rickets. In young infants under three months there is the difficulty, insurmountable in many cases, of differentiating it from the cranial softening of the new born, which is not truly rachitic. They consider it has its greatest significance after six months of age.

Hughes inclines to the view that craniotabes is always a sign of rickets and divides this sign into (1) foetal, and (2) infantile craniotabes. Dalywell and Mackay are of the opinion that the presence of craniotabes supervening after birth can in practice be accepted as evidence of rickets. The possibility of confusion with congenital softening is a very real difficulty, but in the experience of these writers the distribution of the softening is somewhat different. Congenital delayed ossification, especially in premature babies, was not infrequent, and affected particularly the vertex of the skull between the anterior and posterior fontanelles, as well as all sutures. Craniotabes usually appeared first as a patchy softening along the occipito-parietal sutures. The vertex of the skull was not usually involved, but it was common to find all sutures abnormally pliable. In the most severe cases seen, the whole cranial vault was affected and a large part of it was of rubber-like consistency. The distribution was usually a-symetrical which is another point of difference from congenital softening; the opinion is widely held in Vienna that it is more extensive on the side on which the infant's head habitually rests.

The acceptance by the writers of craniotabes as a sign of active rickets is based on the following evidence:—

(a) The seasonal incidence of craniotabes corresponded with that of rickets.

(b) The majority of young untreated infants with craniotabes also developed other signs of rickets.

(c) Young infants with radiographic evidence of active rickets usually had craniotabes as well. (Of twenty-four infants under twelve months with radiographic evidence of rickets, twenty-one had craniotabes).

(d) Therapeutic test, cleared up quickly under treatment.

The absence of craniotabes in older children with active rickets is probably due to an alteration in the rate of growth of different bones; possibly craniotabes is especially likely to develop in any young rachitic infants.

In the experience of these writers craniotabes was usually the earliest sign of infantile rickets in Vienna and could sometimes be diagnosed before three months of age. It is a less subjective sign than minor grades of beading, and its persistence denotes active rickets. Though frequently present in infants between nine and

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*Part III., No. 3, Special Report Series No. 77 of the Medical Research Council of Great Britain, 1923, by E.J. Dalywell and Helen M. M. MacKay.

†Read before the Osler Reporting Society, Montreal, Dec., 1923.

thirteen months of age associated with rickets of moderate severity its absence after nine months of age is of no diagnostic significance.

Rachitic Rosary, an enlargement of the costo-chrondral junction is an important sign of early rickets but less easy to determine than craniotabes. A minor degree of beading was practically universal and in order to determine its significance histological examination was made of cases in the post-mortem room. Section of the ribs showed that histological evidence of rickets was sometimes present without enlargement of the costo-chondral junctions; that lesser grades of beading were frequently rachitic but might be associated with other abnormalities such as osteoporosis, and that the more marked enlargements were either rachitic or scorbutic in origin. The rachitic rosary is usually developed later than craniotabes. It was commonly seen in the fifth to the sixth month of life. A rapid rate of enlargement proved very significant although eventually responding to treatment. Diminution in size was not manifest for from four to ten weeks by which time by x-ray calcification could be shown to be far advanced.

Cranial bossing is not easily diagnosed in infants of mixed races. As an early slight sign it is not of much value, but when associated with other early signs it is helpful in early diagnosis.

Epiphyseal Enlargement is a later sign than either craniotabes or the rachitic rosary and is of little value in indicating the onset of the disease. Radiographic evidence of rickets at the epiphyses can usually be demonstrated before the development of any enlargement by clinical examination.

Towards the end of the first year of life some increase in the size of the wrist and ankle occurs in normal limbs and complicates the diagnosis of rachitic enlargement. When enlarged epiphyses are present their significance can only be interpreted in association with other clinical signs or radiographic evidence, as the enlargement persists long after the active stage of the disease is past..

Delayed closing of fontanelles is frequently met with in rickets and is sometimes present in cases with no signs of rickets and in some definite cases of rickets the fontanelles closed at an early age. *Thoracic deformity* is a secondary defect from mechanical stress, etc. *Curvature of long bones* is not an early sign.

As regards the *signs of rickets other than the bone lesions*, it is a matter of observation that they vary considerably in individual cases. Shipley, Park and others have suggested recently that different clinical and histological pictures of rickets may develop as the ratio of calcium to phosphorus is varied in the diet. Rickets has been subdivided into two groups—(1) Rickets with low blood calcium and normal phosphorus; (2) Rickets with low blood phosphorus and normal calcium.

Such an explanation might explain the high incidence of tetany (low calcium) in Glasgow where 40% of cases of rickets showed tetany, while in Vienna tetany as a complication was comparatively rare. Pallor, sweating of head, enlargement of spleen and anaemia were not noted to be more marked than in non-rachitic infants.

Nasal Operations in Bronchial Asthma.—In analyzing ninety-four consecutive cases of bronchial asthma that have been under his personal observation for a number of years, Morris H. Kahn, New York, had the opportunity to notice the effects of nose and throat operations on thirty-three of these. In fifteen cases, relief of nasal obstruction was obtained. In two of these, atrophic rhinitis resulted as a serious sequel. In the other cases, the operation was of no benefit. In most cases the improvement that resulted, even as concerned the local condition, was only temporary and incomplete; and in many cases the local condition for which the operation was performed, recurred. Even in patients in whom there was definite relief of obstruction and in whom nasal breathing became free, the asthma was not influenced.—*Jour. Am. Med. Ass.*, Feb. 16, 1924.

Editorial

THE TREATMENT OF GENERAL PARALYSIS BY MALARIA

WITHIN the last seven years methods of treatment of general paralysis have been found, the results of which seem to indicate that cases of this disease, in which hitherto the prognosis has always been of a hopeless character, if taken in its earlier stages, can be prevented from progressing further on the road to dementia and can even be restored to a degree of health, physical and mental, which may enable them to perform with satisfaction the work of their vocation in business or in professional life.

In one of these methods the remedy used is tryparsamide, an organic compound of arsenic, the discovery and preparation of which we owe to researchers in the Rockefeller Institute of New York. It is now being used in the treatment of dementia paralytica and the results so far obtained from its use encourage the hope that it will ultimately prove to be of great value in the treatment of cases in the various stages of this malady.

Of intense interest, theoretic as well as practical, is the method which involves the introduction into the blood of the patient afflicted with general paralysis of the organism causing malaria, and the consequent production of attacks of typical malarial fever, which, as experience shows, may result in remissions, complete or partial, of the symptoms of the original disease.

This method of treatment had its origin in Vienna under Professor Wagner-Jauregg who was induced to attempt it as a result of the conclusions drawn from the effects of febrile attacks, artificially produced on patients afflicted with general paralysis. It was observed that high temperatures temporarily produced by the injection of a chemical substance (sodium nucleate) or a toxin (tuberculin) which causes febrile attacks exercise an ameliorative action on the course of the disease, and this suggested that if attacks of high temperature repeated at short intervals can be brought about without seriously affecting the patient, the effects in the direction of the remission of symptoms will be cumulative and therefore possibly of a pronouncedly favourable character on the course of the disease. The choice of the malarial organism as a factor in producing these attacks of high temperature at short intervals was obvious as it was a case of "tracking suggestion to its lair." The malarial treatment of general paralysis followed with results which are of startling novelty.

The treatment consists in the injection into the circulation of the patient of 2-4 c.c. of the blood immediately drawn from the vein of a subject of benign tertian malaria. There develops in a week in the patient typical attacks of malaria and when ten to twelve of these have been obtained the malaria is cured by the administration of quinine, at first daily for three days in doses of fifteen grains, and thereafter daily for a fortnight in doses of eight grains. This invariably results in the termination of the malarial condition. Concurrently with the quinine administration and following it, six doses of neo-salvarsan are given intravenously, each weekly, the first of 0.3 gram, the second of 0.4 gram, and the last four of 0.6 gram each.

During the malarial attacks, and not infrequently for some time thereafter, there may be an accentuation of certain mental symptoms of the original condition, as, for example, delusions of persecution and auditory hallucinations. In a few weeks after the malaria ends there begins in the majority of cases a remission of some or all of the paretic symp-

toms. This remission tends to be complete if the patient is in the early stage of the disease, but even in the advanced stage he is benefitted, for a cessation of acute symptoms occurs; the further development of the dementia may be halted; and there may even be a more or less complete return of the normal mental condition, the patient becoming sociable and inoffensive, and capable, to a certain degree, of occupying himself usefully with his own occupational affairs.

Of the two hundred and ninety-six cases reported from Vienna on which complete observations were made, 202, that is sixty-eight per cent., showed remissions of varying extent, and of these latter, 112, or thirty-eight per cent., manifested complete remission. Three of the latter, treated in 1917, are still actively employed at their business occupation and give no sign of a relapse, in seventeen the remission has already persisted for two to three years, and in thirty-four treated later the remission has been maintained for one to two years. Of those in whom the remission was only partial all were in more or less advanced stages of the disease and yet they benefitted by the treatment, especially as there was a regression or a cessation of the acute symptoms.

The treatment is being tried at various centres in Germany, Denmark and Holland. Weigandt reports from Leipzig fifty cases in which there were remissions in forty-four, in twenty-four of which they were good. The remissions, he found, did not occur at once on the cessation of the malarial attacks but progressively over weeks and even months, so that in cases in which at first indifferent results were obtained, on re-examination months later, there was a complete absence of the paretic symptoms.

A curious fact in many of the cases is that the clinical and serological findings may not agree. In many of those in whom the remission is complete, the blood and cerebro-spinal fluid give a positive Wassermann reaction and yet in some of these, months later, the reaction becomes negative. This discrepancy may be found in cases in which complete remission of the symptoms was brought about by treatment with the tuberculin-mercury method which may, though not as frequently, or usually as favourably affect the symptoms of paresis. Gerstman reports a case thus treated in 1909 in which the remission is still complete but the blood and cerebro-spinal fluid, when recently examined, gave the Wassermann reaction.

From this it is clear that the beneficial effects of the treatment are not necessarily due to any spirochaeticidal action either of the malaria organism or of the high fever it induces. According to Dattner and Kauders the malarial treatment, followed by two or three injections of salvarsan, gave remissions in cases of disseminated sclerosis and in paralysis agitans, which are of non-syphilitic origin. This would seem to indicate that the high temperatures of the malarial attacks and the salvarsan affect not so much the spirochaete, the causative element in general paralysis, as they do those tissues of the central nervous system involved in the nervous lesions responsible for the paretic symptoms. It may be that the parts concerned in the lesions are "keyed up" by the hyperpyrexia and salvarsan not only to react resistently to the spirochaetes, but also to regain much of their former structure and function. Whatever the ultimate interpretation of the action of the malarial attacks and the salvarsan may be, it is certain that in "malarial therapy" a new era has begun for the treatment of paresis, which hitherto has been regarded as incurable or even by any therapeutic measures as unameliorable.

There are however risks to be run in this treatment, and they should be, if at all possible, avoided. There are patients, very few of course in number, who cannot tolerate quinine, and therefore should not be inoculated with the malarial organism. The patients must have sufficient resisting power to withstand the malarial attacks and this would exclude a number of advanced cases of paresis. Only the organism of pure tertian malaria should be employed in the

inoculations and the course of the blood infection should be controlled by daily blood examinations made by experts. In case of sudden and very marked malarial attacks, or when there is a great loss of strength, or when jaundice sets in, quinine should be administered at once to check the infection. The treatment should be given only in a hospital, and one wholly free from lice, bugs, mosquitos and gnats, in order to prevent the spread of malaria. There is, of course, some difficulty in obtaining the tertian form of the organism, but it may be transferred from one paretic to another, as all paretics are now recognized as syphilitics. The blood, however, from a paretic in the malarial condition cannot be used to infect patients suffering from disseminated sclerosis or paralysis agitans, for these conditions are not due to the action of *spirochaeta pallida*. Other precautions will, doubtless, be found necessary as the treatment is generally applied. Already it is allowed by the Danish health authorities only in hospitals licensed therefor and in which it is carried out under the strictest expert supervision.

LITERATURE

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THE RESULTS OBTAINED FROM TESTICULAR GRAFTS

THE Hunterian lecture delivered by Mr. Kenneth M. Walker, before the Royal College of Surgeons of England, on February 4th., 1924, had for its subject a review of our knowledge of the results obtained from testicular grafts. In commencing his lecture he stated that the subject was not altogether irrelevant for John Hunter in 1780 was one of the earliest who succeeded in transplanting the testicle of a dog. Although the full import of this experiment does not appear to have been realized at the time, the fact that transplantation had been achieved may well have acted as an inspiration to Berthold and other pioneers in the work they carried out nearly a century later. Brown Sequard, about 1888, was the first to call attention to the possible value of extracts of animals' testicles as a therapeutic agent. His experiments were conducted on himself, and he claimed that as the result of such injections a definite improvement in his health was brought about, accompanied by a great increase in muscular and mental energy. That such injections are not entirely free from danger was later on demonstrated by Loisel who found that the ovaries and testicles of fishes, birds and mammals all contained toxic substances which when injected subcutaneously may provoke serious symptoms or even death.

Walker's observations had been made for the most part, on the use of a special extract prepared at the Lister Institute from fresh bulls' testicles, but as the result of his investigations he came to the conclusion that testicular extracts administered by the mouth were entirely without effect. Pariser, it is true, states that he also made trial of a substance prepared from testicular tissue and administered by the mouth, which was not destroyed; his claims have not yet been substantiated. Of preparations available for subcutaneous or intravenous injections the lecturer had as yet but little experience, but he was convinced that future progress lies in the discovery of an effective preparation of this nature. However brilliant the results, the implantation of a testicular graft may sometimes give, it is obvious that severe limitations are imposed on such a method of treatment, and that, as was the case in the organotherapy of the thyroid, little

advance will be made until the use of grafts is replaced by that of a really efficient extract.

Toward the end of the last century, the partial success that followed the use of thyroid grafts revived interest in the subject of gland transplantation in general, and it was not long before further attempts were made to remedy testicular deficiency in this way. The difficulty of obtaining human material resulted in another extensive trial of animal grafts. Although these were as a rule rapidly absorbed, good results were sometimes obtained owing to the fact that during the process of absorption a certain quantity of internal secretion found its way into the blood stream. In order to avoid the fate that almost invariably overtakes grafts obtained from the lower animals, Voronoff, in 1920, made use of testes taken from an anthropoid ape. As the result of his experiments he came to the conclusion that grafts obtained from the higher apes are capable of surviving in the human body for an indefinite period, and in 1923 he reported several cases in which improvement following a graft persisted for as long as three years. Other workers have used for the purpose of grafts human testicles obtained from recently executed criminals, and from patients dying as the result of accident. In his own work Mr. Walker made use of testicles obtained from cases of ectopia testis, and he considered this to be the most practical method of procuring suitable material. An ectopic testis, defective though it may be as regards spermatogenesis, was usually well developed from the point of view of internal secretion. Most of the material used in his series of cases was obtained from young donors between the ages of ten and twenty-two. A few cases of testicular grafts carefully examined before and after treatment in his opinion furnished more reliable evidence of the value of the method than a larger number in which the examinations had been less complete. In the cases recorded in literature by other workers the proof that the transplant had been of value rested entirely on clinical grounds. Such criteria are not absolutely reliable for all are likely to be influenced by the factor of mental suggestion. In order to obtain data on which more confidence could be placed a careful investigation of the metabolism of the patient before and after operation was carried out. The work of Dixon, Mackenzie Wallis and others, suggested that alterations in the internal secretion of the testis might be rendered evident by the sugar tolerance test, and observations on this were carefully carried out by Professor Winnifred Cullis. As the result of these investigations it appeared reasonable to infer that a definite effect was produced on the carbohydrate metabolism of patients who had been subjected to the operation of testicular grafting. The maximum effect was produced shortly after the implantation of the graft. In two of them the effect appeared to wear off in a short period. In the third the effect was maintained up to the date of the report.

Although the results obtained from the treatment of testicular deficiency by means of grafts were distinctly promising it must be remembered that there exist limitations to this method quite apart from those imposed by the difficulty of obtaining material. In few of the cases showing signs of testicular deficiency is the deficiency entirely confined to the testicle. Especially is this true in cases of congenital deficiency. In such, even although only one gland may originally have been at fault, as the result of its failure other members of the endocrine group in time become affected. For this reason the results obtained from a testicular transplant were limited and did not effect complete disappearance of symptoms.

A further question of the greatest importance in assessing the value of grafts is the question of their durability. Will a heterograft of testicular tissue that has been successfully vascularised survive indefinitely, or will it undergo slow absorption? Voronoff states that in one of his successful cases improvement was maintained for a period of four years. In the lecturer's opinion a heterograft,

however complete its vascularisation may be, undergoes from the very beginning a process of absorption. Morris made the interesting observation that in one of his cases in whom the testicles showed signs of atrophy, the insertion of a graft stimulated the growth of the patient's own testes, and the enlargement and increased activity was maintained even after the grafts were no longer palpable. The probability, therefore, that grafts will, in time, become absorbed is not a valid argument against their use. Lydston, who has been a pioneer in this work, has written as follows: "It is my belief that practically all if not all subjects can by means of grafts, if operated on at or about the usual age of puberty, be taken through puberty and will show sex development with corresponding secondary masculine sex characteristics approximating the normal more or less closely." The lecturer was in agreement with this statement provided the case be one of pure testicular deficiency and not one of hypopituitarism.

ALCOHOLIC INTOXICATION IN AUTOMOBILE DRIVERS

THE development of motor transport has greatly increased the dangers connected with street traffic, and these demand that everyone driving a motor vehicle shall be in complete control of all his senses. A drunken driver on our streets constitutes a great additional risk, a risk which calls for drastic suppression. In all our large cities magistrates feel it necessary to deal with drunken drivers more and more severely, but the severer the punishment becomes for being drunk while in charge of a car, the more necessary is it that the court should be certain that the driver was at the time under the influence of alcohol or of some other drug, which might impair his faculties. Unfortunately there can never be any clear cut and scientific definition of drunkenness, and while it may be easy to state that a man is under the influence of alcohol when in the more advanced stages of intoxication, it may be difficult to affirm that a man's brain is clouded when he has only taken small amounts. In deciding the question it is to be remembered that even small doses of alcohol can be shown by accurate psychological tests to produce a distinct depression of the powers of judgment. In larger amounts it produces a descending paralysis of the brain, depressing first the higher centres of discretion and judgment, and later the motor centres and the centres for coordination. In the same individual the apparent effects of alcohol may also vary greatly according to the surroundings; the amount of impairment of the motor functions may also depend a great deal upon the degree of practice the individual has had in their special movements. A skilled musician who is also a chronic drunkard may be able to play with considerable skill when he is too much under the influence of alcohol to stand steady, but *his judgment and discretion* will be liable to be more impaired, even than his motor powers. It is consequently very difficult to devise a fair test for drunkenness. A writing test is much more severe for some than for others; for a manual worker than for a clerk.

The problem has reached an acute stage in Denmark for under the Danish law a man may be permanently deprived of a license on a single conviction of being drunk while in charge of a car. At the request of the chief of police the Danish medico-legal Council in consultation with an alienist worked out a scheme for the clinical examination of all drivers asserted to be under the influence of liquor. This scheme requires the examiner, a medical man, to observe the prisoner's general condition, the presence or absence of the smell of alcohol, or any alcoholic liquor, and the condition of his speech, gait, handwriting and pulse. It prescribes, also, a simple memory test. A medical expert has been appointed

whose services are immediately available by day or by night to examine drivers accused of drunkenness. This expert has made a report on the results of the examination of fifty cases. Forty-five minutes were considered necessary for the examination of each case, in order to arrive at a just conclusion in doubtful cases. He found that the pulse rate gave little help; memory tests, however, he considered to be of value, and one of the most useful was to demand from the subject a short, coherent account of some recent event. In charges of drunkenness against a motor driver the police know the circumstances, and may be aware that in a particular instance a trained driver has driven in a very incompetent way; the physician called in to confirm their impression may have little difficulty in a percentage of cases, but in others a definite decision may be hard to arrive at; and owing to variations in alertness of individuals it seems doubtful whether a fixed schedule for clinical examinations would prove of any value. The appointment of a medical officer to examine all cases in a certain area would appear to be a long step towards obtaining uniformity in the administration of the law. An opinion expressed would be still more valuable if two experts worked together on each case. Any steps in this direction would, we are sure, be welcomed by the medical profession.

Editorial Comments

BULLETIN OF NATIONAL COMMITTEE FOR MENTAL HYGIENE

We have received the January issue of the Bulletin of the Canadian National Committee for Mental Hygiene, and note many interesting items regarding the progress of this important branch of preventive medicine. Of general interest is the account of the oldest colony in the world for the mentally handicapped. Dr. Auguste Ley, of Brussels, visited the Dominion lately, and in the course of an address spoke of the unique colony which existed in Gheel in Belgium for mental defectives, which has been in existence since the 5th or 6th century. Originally there was at this place a Shrine which was resorted to by those afflicted with mental disease. Since no institutions for their reception existed in the village it was the pious custom of the peasants to receive the patients into their own homes. This tradition and custom has persisted since then, and to-day there are approximately 2600 patients suffering from mental disease and mental defect in this village. Only homes that were irreproachable from the standpoint of unblemished morality have been permitted to receive such patients, so that to have an insane or feeble-minded individual came to be regarded as a badge of respectability and standing. The effective manner of treating such patients was passed on from father to son as a family tradition. At the present time the Belgian government confers diplomas upon those who pass state examinations. Recently there has been established a small hospital for the diagnosis and treatment of early cases. The religious element however has been the great factor, not only in creating this colony, but in conferring upon it such a remarkable history of long continued and fairly successful effort. In the near future through the assistance of the Rockefeller Institute a modern psychopathic hospital will be built in Brussels which will permit not only the early care of such patients but be utilized also for research and for the education of medical students.

In the same number, a description is given of the psychopathic hospital at Winnipeg, which was built five years ago, and has accommodation for 32 patients. During the few years since it has been opened, 1000 cases of mental disorder have received medical care, and two out of three of this large number have been so successfully treated that they have been permitted to return to their own communities. So successful has this hospital been that the sum of $1,500,000.00 has been appropriated by the

Government of Manitoba for the erection of two additional psychopathic hospitals, one at Brandon and the other at Selkirk. When they are completed, the province will possess adequate facilities for the treatment of over two hundred early acute cases.

MEDICAL INSURANCE EXAMINATION FEES

What is a reasonable and adequate remuneration for a physician to receive for carefully examining an insurance risk and reporting same to an Insurance Company? Opinions differ considerably on this point. Our Association, however, has gone on record for the past two years as being strongly in favour of a minimum flat fee of $5.00 per examination. Having so resolved, the Secretary was instructed to communicate with the various Insurance Companies doing business in Canada. Some Companies do pay the $5.00 fee for certain policies, while others, again pay varying sums from $3.00 upwards. Those Insurance Companies who took the trouble to make any reply to our communications, pointed out two things,—

(1) That their tariff did not permit of a payment of $5.00 for medical examination; and,

(2) That they had no difficulty in finding physicians who were willing to do their examinations for the fees paid by them. The net result of our overtures to the Insurance Companies has been practically nil. The reason for our having accomplished nothing is very obvious. So long as physicians can be found to work for the fees set by the Insurance Companies, just so long will our efforts be unavailing. If a minimum fee of $5.00 is a fair and reasonable fee, then the profession should absolutely stand together and demand that that fee be paid for a careful and complete examination.

ON THE VALUE OF MASSAGE AND REMEDIAL GYMNASTICS

In the founder's lecture delivered before the Chartered Society of Massage and Medical Gymnastics by Sir William Milligan in the rooms of the Royal Society of Medicine on January 14th, the speaker congratulated the society upon the excellent work it had already accomplished. It had greatly helped to place massage and medical gymnastics in an impregnable position amongst the agencies in daily use to combat disease. The practice of massage was of very ancient origin. Homer speaks of the massage of war-worn heroes in order to rest and refresh them. From the dawn of history, systems of massage were practised by the Chinese, the Persians, the Indians, and the inhabitants of the Malay peninsula. Its remedial value was appreciated by Hippocrates. Celsus was probably the first heliotherapist, and Galen the first to advise the warming of the body before anointing and friction. In the XVIth century an ardent devotee of manipulative surgery was Ambroise Paré. Speaking of the place of the masseur or masseuse in modern medicine the lecturer said that he or she was not merely a trained manipulator, but was also a physiotherapist and to some extent a psychotherapist. The criticism is sometimes made that the training of masseurs and masseuses was too elaborate and technical, but unless the foundations of the art are well and truly laid the superstructure will be inadequate to meet modern demands. Statistics from the Massage and Remedial Gymnastics Department of the Manchester Royal Infirmary reveal steady progress. In the year 1919, 2,812 patients were given nearly 44,000 attendances and treatments, while in 1923, the patients numbered nearly 4,500, and the attendances and treatments nearly 66,000. In the treatment of such conditions as neurasthenia, neuritis, and infantile paralysis, the therapeutic armamentarium would be sadly depleted were massage and remedial exercises dropped. In orthopaedic surgery few cases are treated to-day without recourse to this form of treatment. In *tic douloureux* gentle stroking along the course of the affected nerve, with firm pressure at the point of exit often gives great relief. In general, the effect of head massage is soothing. In facial paralysis, a regular course of massage from the moment the paralysis became apparent is of great importance. It was necessary, however, to be on guard against straining the importance of any particular measure. A few years ago the importance of breathing exercises was exaggerated, and in

many cases uselessly employed. The lecturer laid stress upon the importance of the thorough grounding in anatomy and physiology for its members which the Chartered Society had instituted. So long as an excellent training is insisted upon, no extravagant claims made, and no suspicion of charlatanism tolerated, the profession of massage will have the support of the medical profession, and the gratitude of the public. The masseur or masseuse was not intended to be a mere mechanic or mere manipulator, but one who appreciated with the physician or surgeon under whom he or she was working the reason and object of the special manipulations to be carried out. This intelligent appreciation would never be secured unless a high educational standard was maintained by the Association.

THE BRITISH EMPIRE CANCER CAMPAIGN

Last spring an appeal was made under the title of the British Empire Cancer Campaign, for the purpose of raising one million pounds for cancer research. The appeal at the first did not receive the approval of many in the profession. The Medical Research Council at that time refused its support because it clashed with the work of the Imperial Cancer Research Committee, a long established body which had done good work in collaboration with the Research Council. We are glad to note that all difficulties between the various bodies have now been removed and the cooperation of the highest authorities has been obtained. Following a conference between representatives of the Royal Society, the Medical Research Council, and the British Empire Cancer Campaign, a committee has been appointed consisting of Sir John Blandford Sutton, President of the Royal College of Surgeons; Dr. H. H. Dale, head of the Dept. of Biochemistry and Pharmacology under the Medical Research Council; Dr. F. Garland Hopkins, Professor of Biochemistry in the University of Cambridge; Dr. Robert Knox, Director of the Electrical and Radiotherapeutic Dept. in the Cancer Hospital; Professor C. J. Martin, Professor of the Lister Institute of Preventive Medicine; Dr. Robert Muir, Professor of Pathology in the University of Glasgow; and Sir Humphrey Rolleston, President of the Royal College of Physicians. The formation of this scientific committee, half of the members of which are appointed by the Royal Society and the Medical Research Council, marks an important step in the process of completing an excellent organization. Subscriptions received at home and from Empire sources through the British Red Cross Society amount to more than $350,000.00. Although much more will be needed for the investigation of so complicated and so widespread a group of symptoms, it is not intended to hold up any work in the investigation until any specified total sum has been reached. The functions of the committee will be to devise schemes of research, to maintain communication between research workers all over the world, and to keep the public informed of the nature of the problems to be solved and the progress made toward their solution. The names of the members of the committee are a guarantee that no branch of research will be neglected, and that the money will be spent wisely. The aim is to coordinate and combine all research work, to prevent overlapping, and to fill up gaps where now there are few or no workers.

In the last bulletin of the American Society for the Control of Cancer, it is stated that action of fundamental and far-reaching importance has recently been taken by that society. The society has determined to stand on its own feet as a national organization, and will not ally itself with other bodies, but will hold a very cordial attitude towards all other health and philanthropic societies and give them all assistance that it can. Two objects are in view; to obtain information and to publish it. From the statements made in the bulletin the work of the society is intended to be both epidemiological and educational and so far as may be possible to effect the control of the disease by whatever means experience and investigation show to be useful.

DANGEROUS DRUGS

We note that it is proposed to summon this year two conferences to deal with certain aspects of the traffic in dangerous drugs, and with the possibility of obtaining international

cooperation through the League of Nations to give effect to the Opium Convention of 1912. The Council of the League has fixed November 3rd as the date for the first of these conferences and proposes that this conference should deal with the gradual and effective inspection of the manufacture, use and internal trade in prepared or smoking opium, and the prohibition of import and export of prepared opium as laid down in Chap. 2 of the Opium Convention. It will be attended by representatives of the powers owning territories in the Far East. The second and larger conference will be held on November 17th, and will deal with the limitation to medical needs of the manufacture of the opium alkaloids and cocaine and the production of opium and coca leaves in accordance with the restrictive articles passed by the Opium Convention. A preparatory committee appointed by the advisory committee on opium, consisting of six members, including a representative of the United States, is to draw up a programme for the second conference. The secretary general of the League is, we understand, inviting suggestions from the governments concerned in the preparation of this programme.

THE EFFECT OF OPIUM IN CARDIAC DYSPNOEA

At a recent meeting of the Royal Society of Medicine, Dr. Claud Wilson read a paper on "The effect of opium in cardiac dyspnoea." Dr. Wilson divided cardiac dyspnoea clinically into two distinct types; first, ordinary breathlessness as an immediate consequence of exertion; and second, paroxysmal dyspnoea, which he further subdivided into Cheyne Stokes breathing and cardiac asthma. It is for the treatment of the latter type of dyspnoea that he specially recommends the use of opium. The indications for this treatment would appear to be borne out on physiological grounds by the data collected by Professor F. R. Fraser. Professor Fraser, after referring to the investigations of many workers on the differing clinical types of cardiac dyspnoea, stated as his conclusion that if the present explanation of the causes of dyspnoea is correct, then any treatment which is to affect the fundamental cause of the dyspnoea, namely an oxygen deficiency through venous stasis, must be directed towards improving the efficiency of the circulation. Administration of oxygen can only be useful when the arterial blood is deficient in oxygen. The rapid shallow breathing is peculiarly ineffective in correcting the disturbance as it allows a certain amount of stasis to occur at the base of the lungs and thus deprives the respiratory movements of much of their value. The administration of morphia which induces deepening and slowing of the respiration appears also to strengthen the circulation and certainly improves the general condition. In the treatment of paroxysmal dyspnoea with progressive œdema of the lungs, not only does the respiratory disturbance and distress diminish after the injection of morphia, but the œdema of the lungs may clear up. If such paroxysmal attacks with or without the development of œdema are due to an exacerbation of weakness in the left ventricle, then the essential cause of the dyspnoea will be the same as in simple cardiac dyspnoea, namely, oxygen lack at the cerebral centre. Morphia depresses the centre so that it reacts as a raised threshold. The effect of treating cases of dyspnoea with morphia is therefore to raise the threshold so that the centre reacts to a higher H-ion concentration than before.

TREATMENT OF DYSMENORRHOEA

This paper may be well considered in conjunction with that by Professor Christian which appeared in the February number of the *Journal*. The difficulties experienced in obtaining definite knowledge of lesions in the ductless glands, the symptoms indicated thereby, and the unfortunate result of extensive theorizing without sufficient premises have been well exposed by Dr. Christian.

With five of Dr. Bercovitch's conclusions regarding dysmenorrhoea no fault can be found. With the sixth where it is *assumed* that "endocrine disturbance resulting in vagotonia is by far the most common cause of dysmenorrhoea without gross pathological lesion in the pelvis," it is possible to take issue.

Whether or no "vagotonia" is present, might, of course, be definitely determined by the injection of adrenalin with study of the subsequent reaction of the blood pressure and

pulse; but even in the absence of this characteristic reaction it is submitted that the flushings, perspiration, weeping, and endothelial permeability associated with pure sympathetic stimulation, are not frequently noted is association with recognized forms of dysmenorrhoea.

Then, too, the persistance of unaltered menstruation after removal of most, and sometimes of apparently all, of the ovarian substance would suggest that ovarian insufficiency should not be given too great prominence in any theory of dysmenorrhoea.

In a few words, this complicated endocrine theory as an explanation of what has long been accepted, (namely, the abnormal contraction of the uterine muscle at the time of menstruation,) associated with more or less "gun-shot" endocrine therapy, will do little more for us in helping to overcome the condition, than will the recommended treatment by dilatation of the uterine cavity and tense packing.* True, organotherapy may serve to lessen the unfortunate results of dilatation when accompanied by curettage, but the careful physician will hesitate even to dilate in those cases where there are evidences of infection in the cervix or uterus.

*Menge: Zent. für Gyn., 1922, 33, 1330.

THE DANGER OF FROZEN TOXIN-ANTITOXIN

During the first week in February students in two Massachusetts institutions were inoculated with toxin-antitoxin. Forty-four of those inoculated suffered severe local and constitutional reactions. Subsequent investigation revealed the fact that the serums had been exposed to extremely low temperatures and had to be thawed before they could be used. An investigation carried out by representatives of the United States Public Health Service brought to light new facts regarding the toxin-antitoxin combination, namely, that freezing dissociates the combination and sets free a certain amount of toxin which consequently may produce symptoms. This fact should be remembered, but should not in our opinion deter any physician from using with care the toxin-antitoxin method for the prevention of diphtheria. Almost a million inoculations in New York have been given without the slightest distress, and hundreds of thousands in other portions of the United States. This should be sufficient evidence of the safety of the method and of its great value.

DIRTY PAPER MONEY

In the earlier days of the campaign against harmful germs attention was directed to the many objects which might carry them. While infectious material may certainly be carried by objects, the human carrier has recently attained greater prominence. At the end of the last century dirty money came in for its share of condemnation. At that time bacteriological investigation failed to produce evidence of any abundant distribution of micro-organisms even on the dirtiest of paper currency. There appears to be something in the composition of the printed bill that acts unfavourably to bacterial life. The flood of paper money that has inundated Central Europe has directed attention anew to this medium of exchange as a carrier of disease. Investigations of Kiefer in Bonn indicate that the condition of the bill is no index to the degree of bacterial contamination. Mark notes in ordinary commerce may carry widely varying numbers of viable germs, though the total number is not large. In some cases the life of pathogenic organisms on German paper money was found to be preserved for long periods. This reported contamination of our paper currency would appear to demand further investigation. It may be that German paper money owing to cheaper methods of manufacture possesses a lowered bacteriological property than paper currency in this country. Metallic money, it is noted, is far less liable to be contaminated by living micro-organisms, owing apparently to a germicidal action of metal surfaces.

INFECTION BY PUBLIC TELEPHONES

An alarm has been raised from time to time on the possibility of transmitting infectious disease through the use of public telephones. We note from the *Lancet*, Feb. 23rd, 1924, that the Postmaster General of England has recently issued a press notice asserting that there is no risk of such transmission, and that the alarms raised from time to time have no foun-

dation in fact. He bases his statement on the following medical opinions. In 1905, Dr. William Collingridge, then Medical Officer of Health for the City of London, caused numerous bacteriological experiments to be carried out in conjunction with the National Telephone Company for the purpose of ascertaining whether public telephones were a source of danger to those using them. Professor E. E. Klein of St. Bartholomew's Hospital, who carried out the investigation, reported that the results obtained by him confirmed those of a previous enquiry by the City Medical Officer of Health, and proved that there was no risk of infection from their use. In 1910, Mr. Herbert Samuel, Postmaster General, gave instructions for a number of telephones which had been in use for various periods of time in call offices in London, and had received no special cleansing treatment, should be examined by an expert bacteriologist. The mouthpieces of a number were removed and were forwarded to Dr. Spitta at St. George's Hospital. In addition, Dr. Spitta was furnished with a mouthpiece which had been used for some time by a tuberculous patient, and also with others from a post office frequently used by consumptives from the South Brent Sanatorium. Dr. Spitta reported that his experiments had confirmed in every respect the results obtained by Professor Klein six years before. The mouthpieces examined were free from tubercle and diphtheria bacilli, and no other organisms pathogenic to guinea pigs were present. Two years later Dr. Spitta submitted a second report stating that in view of further experiments he was of the opinion that the transmission of tuberculosis through the medium of the telephone mouthpiece was practically impossible; nevertheless, public telephones in England are directed to be cleansed with a mild disinfectant solution at short intervals.

CANCER NUMBER OF THE CANADIAN PRACTITIONER

In few subjects do we so frequently and greatly need surveys and symposiums as we do in cancer. To those who attempt to follow the literature closely there must often come a feeling of dismay at the growing volume of work: to others who are less closely in touch there will sometimes come a feeling of uneasiness at references to the spread of cancer, which seem as mutterings of some vaguely distant yet ominous storm. From all such there will be a welcome for the last number of *The Canadian Practitioner*. It is a "Cancer" number, and its special object is to "have the general practitioners informed as to the cancer situation, with the hope and expectation that they will do what they can to educate the public, especially as to causation and prevention." In this effort it is desired to co-operate with the American Society for the Control of Cancer, whose activities extend in every direction which "experience and investigation show to be useful" for the attainment of this object. We congratulate the editorial management of *The Canadian Practitioner* most warmly on the success of their attempt. They have gathered work on various aspects of the matter from men of wide experience, and the points discussed are dealt with clearly and comprehensively.

We have received a copy of the programme for the 51st annual meeting of the National (American) Conference on Social Work, which will be held in Toronto in June of this year. It was in Toronto University in 1914, that the first training school for social workers in Canada was founded, and since then the development of the various lines of social work has been rapid and far-reaching. It is impressive to contrast the place occupied to-d by the department of social service in a large general hospital, with the entire absence of such a department in the majority of hospitals ten years ago. The problems taken up by social workers have their own peculiar difficulties, and not the least of these is that the range of the problems is so wide. We note on this programme subjects involving questions of health, education, immigration, administration of justice, public welfare departments, and of many other industrial and economic matters. Such a programme is stimulating in its diversity of interest and in its evidence of zealous endeavour. We extend to the Toronto Committee of Arrangements our best wishes for the success of this conference and would urge a full attendance of all members of the profession interested in this work.

Men and Books

GEORGES LINOSSIER

The death of Dr. Georges Linossier, formerly Agregé Professor of Chemistry in the University of Lyons, and consulting physician at Viehy, is announced from Paris. He acted for many years as instructor at Lyons in analytical and biological chemistry. After the war he collaborated with Professor Carnot of the University of Paris Medical School where he gave supplementary instruction in hydrology and climatotherapy. His reputation as a hydrologist and his value as a teacher led to the consideration of creating for him a chair of hydrology. He published a series of interesting articles on diseases of the stomach and liver, glycosuria and albuminuria, and alimentation and special diets. He was a corresponding member of the Academy of Medicine since 1893. In 1913 he was elected vice-president of the Societé de Biologie.

CHARLES WHITE, (1728-1813)*

The Manchester Royal Infirmary was happy in its choice of Dr. Adami to deliver the first Lloyd Roberts Lecture. Many readers of the *Journal* will remember papers full of historical or biographical interest which the Professor of Pathology at McGill University wrote during his sojourn amongst us. But the selection was a happy thought for other reasons; Dr. Adami, now Vice-Chancellor of the University of Liverpool, was a student at the Manchester Medical School of Lloyd Roberts (who died in 1920 at the age of 86), and has taken as the subject of his lecture the work of another Manchester man, Charles White, in whom Lloyd Roberts himself was most interested.

All of us have a sort of nodding acquaintance with the medical history of the London of the Hunters and of the Edinburgh of Syme or Simpson, but a knowledge of the story of medicine in the provinces is not so readily accessible. The present book reveals to us how important was the work done at Manchester, especially in gynaecology and obstetrics.

Charles White, "the distinguished surgeon who first excised the head of the humerus and both auricular surfaces of the joint for caries, in place of amputation, who used dried sponges to arrest haemorrhage a century and more before Sir Victor Horsley: the 'Father of Anthropometry,' " was responsible for the foundation of the Manchester Royal Infirmary and of the Lying-in Charity which has since developed into St. Mary's Hospital. It is worthy of note that Charles' father, Dr. Thomas White (1696-1776), was particularly interested in midwifery.

We have been taught to believe that Oliver Wendell Holmes and Semmelweis about the middle of the nineteenth century were the leaders in the war waged against puerperal fever . Dr. Adami now shows us what a great influence the book published by Charles White in 1773 entitled *The Management of Pregnant and Lying-in Women, and the means of curing, more especially of preventing, the principal disorders to which they are liable,* had in the same direction. Dr. Adami tells us that though Semmelweis did very much in reducing the mortality especially by insisting on cleanliness and prohibiting examinations by students with dirty hands, he was not able to bring it down to a lower level than that during the regime of his prodecessor Boer, who was appointed as Professor of Midwifery at Vienna in 1789. Boer employed the methods he had learned in England.

Semmelweis was unable to deal with the "self-infected cases," so-called, those due to retained lochia and foul discharges, and it was precisely in the treatment of such cases that White had shown such an advance seventy years previously. Not that White did not insist upon general cleanliness and airiness of the bed and room,—he writes most insistently on these points and upon the isolation of an infected patient,—but he demonstrated the importance of uterine drainage. White recommended that as soon as possible after delivery

**Charles White of Manchester* (1727-1813) *and the arrest of Puerperal Fever, being the Lloyd Roberts Lecture, Royal Infirmary,* 1921. By J. George Adami, C.B.E., M.D., F.R.S., The University Press of Liverpool Ltd. Hodder and Stoughton, Ltd., London, 1922. 8vo, pp. 142, with 2 plates.

the patient be made to sit up or be placed in a reclining position so that the discharges from the uterus should gain a free exit and should not be retained and undergo putrefactive changes. Moreover he insisted that the patient should get up and about on the second or third day at the latest. He was "so successful in his practice that he was able to say that in his extensive experience of more than twenty years, while cases of puerperal fever had occurred through non-observance of the rules he had laid down, he had never lost a single patient from this disease."

Such was the achievement of this man of Manchester, but we must leave it to the reader of this interesting book to discover for himself the parts played respectively by White and Semmelweis in the struggle against the horrors of postpartum fever, and of the wonderful work carried on at the Rotunda, Dublin, during the early part of the last century. Unfortunately the death rate did not continue to fall. The French theory of the epidemic nature of the disease shortly afterwards held sway both in Vienna and in the British Isles, and the postpartum mortality rose again.

The value of Dr. Adami's book is greatly enhanced by the reprinting of chapters I and VI and certain paragraphs of other chapters of the original, and of the appendix to the 1777, edition of Charles White's book on puerperal fever. Photographs of the bust of Charles White now in the Royal Infirmary, Manchester, and of a mezzotint engraving are reproduced as plates in this very interesting and instructive book. A.M.

Correspondence

THE SURGICAL TREATMENT OF BRONCHIECTASIS

To the Editor:

The readers of the *Journal* for this month must have greatly enjoyed, as I have done, Dr. Archibald's masterly paper on the Surgical Treatment of Bronchiectasis. Not the least enjoyable part of it is the opening portion about a type of surgeon that—"so men say" —has appeared in these latter days, who is "chiefly characterized by iconoclastic tendencies unjustified by knowledge, wisdom, or even common sense." The type is fortunately rare although it does occur.

When a mere physician, having been duly gowned, capped and muzzled, is admitted to the sacred precincts of the operating room and watches an expert surgeon exploring and attacking some most hidden part of his patient's frame, what strikes him with most admiration is not the mere handling of the instruments and the making of incisions and other manipulations—any shoemaker or watch-mender is doing far more delicate work than this—but the rapid decisions of what to do and what not to do; which tissue to remove and which to let alone. If the surgeon be a less reliable one, the watcher is, as Dr. Archibald says, "more in fear of the slipping mind than the slipping hand." Mistakes in judgment are fraught with greater danger than are mere slips in manipulation.

Dr. Archibald deals with the surgical treatment of bronchiectasis, and urges with much force the value of excision of the affected lobe of the lung in which the cavity or cavities exist. I will not attempt to discuss the treatment of bronchiectasis (except to say that the therapeutic collapse of the affected lung by the production of artificial pneumothorax, where this is rendered possible by the absence of many strong adhesions, is often very helpful) but rather to differ with Dr. Archibald as to the effect of coughing in bringing about dilatation of a bronchus. He says "during coughing intrabronchial pressure is known to rise from a normal of 2 mm. of mercury to as high as 100 mm. The possible effect of such a distending force is obvious, and it cannot be doubted that the chronic cough..... is a strong causative factor." In the act of coughing there are three stages:—(1) after a preliminary inspiration the glottis is firmly closed;

(2) the expiratory muscles strongly contract and thus raise the intrathoracic pressure; (3) the laryngeal gate is thrown open and the imprisoned air rushes out and makes the sound of the cough. Now it is true that in the second stage air pressure in the bronchi may reach 100 mm. of mercury, but the pressure outside of the bronchi in the general thoracic cavity is at the same height and hence the bronchial walls are squeezed from both sides and are no more apt to dilate than to collapse. It is in other directions that one must look for the explanation of the dilatation, probably chiefly to the surrounding fibrosis (so that the bronchial wall is rather drawn out than pushed out) but certainly it is physically impossible to dilate a tube with a pressure that is the same within and without. The internal pressure in a diseased artery may produce dilatation because the pressure here is greater than it is outside of the vessel, but this explanation cannot hold in the case of a bronchus which lies within the closed thoracic cavity.

I must apologize, Sir, for thus venturing to criticize a small point in regard to the physics of the thorax in a paper that is so excellent both in substance and style.

I am, Sir, Yours faithfully,

Toronto, March 17th, 1924. R. D. RUDOLF.

BANTING RESEARCH FOUNDATION

To the Editor:

The discovery and development of insulin by Dr. F. G. Banting, Mr. C. H. Best and other co-operating investigators has brought relief to a multitude of sufferers from diabetes throughout the world. At a low price this boon has been placed within reach of all. But it is well known that only a beginning has been made in alleviation even of this one malady. Notwithstanding the magnificent advances that have been effected in arresting or averting many of the most grievous attacks of disease on human life, mankind is beset by enemies. Their strategy must be discovered and circumvented. This can be done only by patient research conducted in the main by skilled investigators who devote their lives to scientific enquiry. For these investigators the public at large must provide the means of support, for they it is who benefit immensely thereby. Such work has been going on quietly all over the world. Laboratories in the universities have groups of investigators working in co-operation under the direction of competent scientists. But only now and then does a result such as Dr. Banting achieved strike the imagination of the world. It is therefore, but appropriate that advantage should be taken of it to appeal to the grateful public for support in making possible the continuance and prosecution of this work and of other investigations in medical science. To effect this and to signalize the discovery and the development of insulin, the Banting Research Foundation has been created.

The purposes of this Foundation have been defined to be:—

(a) To provide, in the first instance, further funds for the support of the Banting and Best Chair of Medical Research at the University of Toronto.

(b) To establish a fund for the adequate financial support of such scientific workers as may have proposed definite problems of medical research, and for whom funds are not otherwise available. Such assistance may be given to persons working in the University of Toronto or elsewhere.

All financial arrangements in connection with the collection and reception of the principal and subsequent expenditure of the income of the fund have been vested in a Board of Trustees, the members of which are appointed for a term of three years subject to reappointment at the end of their respective terms of office. Trustees have now been appointed as follows:—

Sir Robert A. Falconer, K.C.M.G., D.Litt., LL.D., D.D. Edin., D.C.L. Oxon., Chairman; President of the University of Toronto.

Lieutenant-Colonel R. W. Leonard, Honorary Treasurer; Member of the Board of Governors of the University of Toronto.

Rev. Canon H. J. Cody, D.D., LL.D., Chairman, Board of Governors, University of Toronto; C. S. Macdonald, Esq., M.A., General Manager, Confederation Life Association; W. E. Gallie, M.D., F.R.C.S. Eng., F.A.C.S., Surgeon-in-Chief, Hospital for Sick Children, Toronto; Professor J G. FitzGerald, M.D., F.R.S.C., Professor of Hygiene and Preventive Medicine, Director Connaught Laboratories,

University of Toronto; Mr. John W. Rogers. The Trustees propose to make an appeal to the public for funds in the immediate future. Subscriptions will be welcome at any time and should be made payable to the Banting Research Foundation, Toronto, Canada.

Yours faithfully,
F. Lorne Hutchison,
Honorary Secretary.

THE BANTING RESEARCH FOUNDATION,
Toronto, March 6th, 1924.

SURGERY AND SURGEONS

To the Editor:

A short time ago a marked copy of *Harper's Magazine* containing an article entitled "The New Control of Surgeons" was sent to every Fellow of the American College of Surgeons in this locality, and presumably throughout both the United States and Canada. The said article condemned in a general way the present state of surgery, and extolled the rescue work undertaken by the American College of Surgeons. It has given rise to much surprise in our district, and surmises are rife as to whether the author may not be a member, or perhaps an official of the college. It certainly appears to contain internal evidence that it was written by some one closely in touch with the governing body of the College, if not directly inspired by one of its members. The writer makes very broad statements and accusations, which to the members of the College in Canada do not appear to be warranted. The statements that operations are performed unnecessarily and for purely financial gain; that many surgeons are unfit to perform surgery and attempt operations in a reckless manner, and that the results of surgical operations in hospitals are not properly scrutinized, appear to me to be most unwarranted. The statement also that there are many hospitals looked upon by the public as being safe and properly equipped with laboratories for investigation and apparatus for efficient diagnostic purposes, while as a fact they are sadly wanting in many important requisites for the modern treatment of diseased conditions, is a misleading exaggeration. Finally, the statement that surgeons generally are in the habit of splitting fees is, so far as I know, a falsehood, as regards Canadian surgeons. There may be black sheep in every flock. There may be fee splitters under the wing of the American College of Surgeons, but that this holds true generally I do not believe, and, made in such a public way, I regard the statement as a most dangerous generalization. I regard the whole of this article as a most exaggerated and unfair accusation, and am surprised to think that such a maligning of the profession should be allowed to appear in a respectable journal like *Harper's Magazine*. While I speak in this way of this, in my opinion, most unjust article, I desire on the other hand to recognize that the American College of Surgeons has rendered, and is rendering, valuable services to the profession and to the community in general by insisting upon higher standards, on careful note taking, and emphasizing the necessity for an improvement in many of the smaller hospitals by increasing their laboratory equipments. I may also add that the body of Canadian surgeons desire to recognize the assistance and support they have received from their American confrères, but they resent very strongly the statements made by the writer of this article.

I should like to take this opportunity of recognizing the admirable work done by the organizers of the Catholic Hospital Association, and to no man more than the Rev. Father Moulinier, S.J., the instigator and President of this Association, is honour due for the success achieved in co-operation with the American College of Surgeons.

On the whole, I feel that the article in *Harper's Magazine* smacks somewhat of the charlatan in its exaggeration and sweeping generalizations.

Yours truly,
EUG. ST. JACQUES,
Prof. of Clinical Surgery,
University of Montreal.

MONTREAL, March 15, 1924.

OFFICIAL DELEGATES FROM THE BRITISH MEDICAL ASSOCIATION

To the Editor:

I hasten to inform you that the Council of our Association yesterday unanimously agreed to appoint two delegates to come over to Canada to attend the meeting of the Canadian Med-

ical Association at Ottawa and at Winnipeg, and to take the opportunity of talking over with the officials of the Canadian Medical Association the proposed affiliation between ourselves and your association, and any other matters of common interest. The whole idea has been enthusiastically taken up by our Council, which is most anxious that something should be done to bring about some bond between us which will leave both of us absolutely free to do our own work in our own way.

One of our delegates will be Sir Jenner Verrall, the senior member of our Council, a former Chairman of the Representative Body and of our Organization Committee, a directly elected representative of the medical profession on the General Medical Council of Great Britain and Ireland, and a member of the General Nursing Council for England and Wales. He is an Honorary LL.D. of Aberdeen University and was Chairman of the Central Medical War Committee, which, during the War, controlled on behalf of the Government the supply of medical men from this country for the Services, with due regard to the needs of the civil population. It was for his services in this capacity that he received his knighthood. Sir Jenner Verrall has for some years been retired from practice, but he was formerly Surgeon to the Sussex County Hospital. I may say that he is a most charming personality, and one of the best of fellows, and will, I am sure, deserve on personal grounds the hospitable reception he will I know receive from you all as the delegate of the British Medical Association. His brother was the late Professor A. W. Verrall, of Combridge, who died a few years ago and who was one of the greatest personalities in that University and a very celebrated Greek scholar.

The other delegate is myself and it may be of some little assistance to you in your arrangements to know something of my record. I was for 16 years in general practice in an industrial area, and I have been 16 years here, for three as Deputy Medical Secretary, and for the rest as Medical Secretary. All my professional life I have taken an active interest in our Association and I was for some years previous to coming here on its Council. There are just two things which I should like to mention particularly as regards myself. One is that I was one of the Secretaries to the Central Medical War Committee above referred to—a strenuous service of which I am very proud; and the other is that it has always been my great ambition as Medical Secretary of this Association to emphasize its imperial character, and I have done whatever I could (and I hope with considerable success) to strengthen our bonds with Australia and New Zealand, to lay the foundations for greater influence in South Africa, and, I hope I shall afterwards be able to say, to do something to ensure that Canada will become an attached member of the great British medical profession as represented by our Association.

I have of course sent the above information to Dr. Routley. As I told him it is impossible to say more at present about the proposed annual meeting of our Association in Canada than that the matter is under the very careful consideration of our Council, which has appointed a Committee to discuss the matter and report. There are great difficulties in the way as you will, I am sure, realize, but we are going to do our best to see if we cannot find a way out.

Yours sincerely,

ALFRED COX,

LONDON,
February 15th, 1924. *Medical Secretary.*

Phagocytosis of Erythrocytes in Pernicious Anaemia.—In a group of typical cases of pericious anaemia, which they have studied during the last year and a half, Francis W. Peabody and G. O. Broun, Boston, found process which is so extensive that it must account for a very considerable amount of blood destruction. This process is the phagocytosis of erythrocytes by endothelial cells. Whether the phagocytosis of red blood corpuscles is of sufficient degree to account for the blood destruction in pernicious anaemia completely, it is not possible to state at present; but the process is certainly so marked that it merits more attention than has hitherto been paid to it by hematologists. — *Jour. Am. Med. Ass.*, March 22, 1924.

Abstracts from Current Literature

MEDICINE

The Treatment of Acute Pneumococcus Infections of the Respiratory Tract. Langley, G. J. *The Lancet*, Jan. 5, 1924.

This paper gives an excellent resumé of the present position of our knowledge regarding the treatment of pneumonia. The division of the pneumococcus into four groups is now generally accepted except in France, where only three are recognized. But whilst Type 1 anti-pneumococcic serum is regarded by the Rockefeller workers as a specific against Type 1. pneumonia, Glynn in his 1923 report to the Medical Research Council states that almost no evidence of the value of this statement is available from English observers. Certain factors must therefore be considered in judging as to the desirability of trying this treatment in England, *e.g.*, the comparative incidence and mortality of pneumonia in the two countries: a collection of American statistics by workers other than at the Rockefeller Institute; experimental determination of the potency of the serum and its methods of administration, with any possible dangers that may accompany its use; and finally, other lines of treatment that may give as satisfactory results.

The figures for the mortality in pneumonia are still very high, in spite of the gradually diminishing mortality in most acute infectious diseases generally. In 1919 the death rate from pneumonia in England was 105.8 per 100,000, and in America 149.8 per 100,000. As regards the type incidence, about one-third of the English and American cases are due to Type 1. It is estimated that in England there were about 32,000 cases of this type in 1919, so that there is ample opportunity for the use of Type 1 serum. The efficiency of the serum is discussed first from the experimental point of view, and then with regard to its results clinically. Experimentally, the results gained with serological treatment, in England, were highly convincing, but clinically, many factors have to be considered, and the numbers available are too few to serve as a sound basis for conclusions. It is worth noting, too, that the mortality from pneumonia in the pre-war German Army showed much smaller figures than those now given by the German workers. However, in spite of the small numbers available, there is a series of English cases reported in which the results of serum treatment have been carefully noted under controlled conditions, and these results carry considerable conviction.

As to dosage, the serum should be given intravenously and slowly. The first dose should be 100 c.c., to be repeated every eight hours till a favourable result is obtained. The stage at which it is given is of great importance; it is unfair to judge the treatment when the serum is given late in the disease. There are dangers from serum reactions, which may either follow the injection quickly and be of the nature of anaphylactic shock, or follow after some days and present symptoms of arthritis, uticaria, and fever. The immediate reaction may be treated with ten minims of 1:1000 adrenalin, and may be avoided by gradual desensitization. Care should be taken to find out if any previous injections of horse derived serum have been given, such as antitetanic serum, and also if there is any history of asthma.

Strong claims have been made for the value of optochin, a derivative of the quinine group. This drug has a very strong sterilizing power against the pneumococcus, more so than against any other organism; experimentally, it can protect against a hundred minimal lethal doses of virulent pneumococci; it acts equally efficiently against all types of pneumococci, including *Pneumococcus mucosus* and when given with a homologous serum, may multiply the effect of that serum fifty times. At the same time it has a very definite toxicity. Reports on the use of this drug are not convincing, but apparently it merits further trial. The toxicity of the drug is such that harmful effects arise before a pneumococcidal concentration has taken place in the blood.

The problem of the carrier in pneumonia has to be considered. "It is stated that 80 per cent. of all lobar pneumonias are due to one of the three fixed types of pneumococcus. On the other hand, 90 per cent. of pneumococci found

in the bucco-respiratory tract of healthy individuals belong to group 4. Similar investigation of pneumonia contacts shows a very high percentage of pneumococci belonging to the type with which contact has occurred. The carrier state of recovered pneumonia cases has been shown to persist for periods varying from 28 to 90 days, and it is well recognized that the virulence of the pneumococcus can be materially raised by animal passage."

H. E. MacDermot

Clinical Studies of Digitalis. Drew, Luten. *Archives of Internal Medicine*, February, 1924.

The author has studied the effects produced by the administration of massive dosage of digitalis to patients with normal mechanism. He begins with the established fact that prolongation of A-V conduction, in a greater or less degree, is a constant effect of the drug in all cases. He mentions the two schools of thought. The one headed by Mackenzie who would limit the therapeutic use of digitalis, generally speaking, to cases that exhibit fibrillation of the auricles, and the other including Eggleston, Pratt and Christian, who have all noted evidences of favourable action from the administration of digitalis to patients with normal rhythm.

The series reported consists of twenty cases. The method consisted of rest in bed with close observation, but without digitalis, for a certain period of time. Particular care was taken to note the heart findings, evidence of congestion of the lungs, hydrothorax, size of liver, amount of oedema, body weight, amount of urine, electrocardiogram, vital capacity, blood pressure, non-protein blood nitrogen, urine findings, and the patient's symptoms. A Wassermann test was made on all the cases. None had continuous fever. After as satisfactory an estimate of the effect of rest as could be made, the observation period was terminated, and without changing any other factor, a large amount of digitalis was given in a short period of time. The total dose was determined by the Eggleston method for an average tincture. Observations were then continued as before, and any pronounced change which resulted, could be therefore reasonably attributed to the administration of the digitalis. If nausea or other evidence of toxic action appeared, the drug was stopped.

The record of the twenty cases showed that the drug affected most of them favourably. There was diuresis with attendant loss of oedema, decrease in the size of the liver, rise of vital capacity and improvement of symptoms. In certain cases the results were most impressive. Those in whom the effects occurred with the greatest constancy belonged to the class known as "myocardial insufficiency." These improved in about the same proportion as do patients with auricular fibrillation. The author states, however, that the improvement is usually of somewhat less extent.

As regards the mechanism by which the digitalis produces its beneficial results in these cases of myocardial insufficiency the author is not prepared to speak definitely. He wonders whether the rapid disappearance of oedema is not the result of some physical or chemical reaction on the body fluids rather than of an effect on the heart or kidneys. However, he thinks that his observations offer strong evidence that the beneficial results which followed the administration of digitalis, in these cases, were the result of some sort of action of the drug on the heart itself, independent of any slowing in the ventricular rate. He also noted in his series that digitalis had no uniform effect on blood pressure. By far the commonest result was a temporary rise in the systolic pressure.

L. C. Montgomery

PAEDIATRICS

Cyclic Vomiting. Talbot, Dr. Fritz, Boston. *Med. Clinics North Amer.*, Nov., 1923.

Periodic attacks of vomiting recurring at fairly regular intervals are not uncommon in childhood. They last two or three days—occasionally a week. Constipation, a heavily coated tongue, and sometimes fever, accompany the vomiting. Even water is rejected and dehydration may result in acidosis. The urine becomes scanty and may contain albumin and hyaline casts and usually acetone and diacetic acid. Attacks are often precipitated by excitement or undue fatigue; sometimes by febrile infections ("colds") and occasionally by indiscretions in diet. Recurrent attacks of chronic appendicitis are sometimes confused with cyclic vomiting. Acetonemia probably occurs as the

result of some abnormality in fat metabolism. There is a lack of assimilation of fat, and abnormal amounts are generally found in the stools. Faulty posture with a protuberant abdomen and enteroptosis are usually evident. Correction of these defects not only reduces the number of attacks but increases the tolerance for fat.

Treatment aims at preventing fatigue and correcting the faulty posture. At first a one-hour rest period morning and afternoon is necessary, with a plain digestible diet, low in fat. Butter is less harmful than cream, with enough carbohydrate to prevent the appearance of acetone.

Improper body mechanics leads to muscular strain and fatigue, but on the other hand, over-fatigued muscles are very conducive to faulty body mechanics. An antero-posterior pad to support the abdomen brings good results, but is only palliative without exercise to strengthen the weakened muscles. Muscle training requires many months to obtain permanent results.

An acute attack may often be aborted by a free evacuation of the bowels. Milk of magnesia or calomel is very satisfactory. Thirst may be relieved by teaspoonful doses of water every five minutes. Ice to suck is not recommended. Large drinks of water are vomited almost immediately. A teaspoonful of ginger may be retained. Milk is to be avoided.

When the stomach becomes settled cereals served with sugar but without milk may be given for a day or two. Begin with a tablespoonful every three hours and gradually increase. After 36 hours skimmed milk may be tried in small amounts. In another day or two return to normal diet. Water by rectum is usually necessary early in the attack. Six to eight ounces of a warm 10% solution of glucose ("corn syrup") can be given every 4 to 6 hours. The Murphy drip is sometimes to be preferred. Bicarbonate of soda is usually not required during an attack and is of no value as a preventative between attacks. Prevention depends on correcting the ptosis, preventing constipation, regulating the diet and daily routine.

L. M. LINDSAY

A Clinical Study of Rickets in the Breast Fed Infant. DeBuys, L. R. *Am. Jour. of Dis. of Children*, February, 1924.

The material for this study was taken from the newly born service and the "follow-up" clinic of Tulane University at New Orleans. Routine clinical examinations of every baby born during the first year of the operation of the service were made for evidences of rickets. The babies were kept under observation in the follow-up clinic, usually at bi-monthly periods. Most of the infants were completely breast fed for three months and a large percentage for six months. Orange juice was added with the institution of any complementary feeding such as cereal and jellies at six months, and soup and vegetables after about nine months. No cod liver oil was given until marked evidence of rickets was present. The clinical evidences of rickets included in the study were, bosses, craniotabes, costal beading, lateral flattening of the thorax, flaring ribs, epiphyseal enlargements, and bow-legs. No children who did not show evidences of rickets before complemental feedings were begun, were used in the study, 197 in number.

Beading of the ribs was the sign most commonly found, occurring in practically one hundred per cent of these infants, both white and coloured. It was first noted as early as the fourth week of life and as late as the thirty-second week. Epiphyseal enlargement occurred in about eighty-five per cent., sometimes as early as the fourth week. Cranial bossing occurred as early as four weeks and in about seventy per cent of the cases. Flaring ribs had about the same incidence. Craniotabes, the least common of the principal symptoms, occurred in thirty-three per cent of the white and forty-three per cent of the coloured. Its onset was noted as early as four weeks, but not after the sixth week in the white nor after the twenty-fourth week in the coloured.

DeBuys concludes from this study that clinical evidences of rickets are more marked in the coloured than in the white race; that there was no seasonal peak for any single sign of the disease, but that considering the combined signs the disease is more active in March than at any other time; and that rickets should no longer be looked upon as a disease of the second six months, but as a disease that begins shortly after birth and presents clinical manifestations as early as the fourth week.

Some interesting observations were also made

on the relationship of this disease to growth and development. The height and weights were of about normal average, and only in the markedly rachitic was there any notable increase in the size of the head or the abdomen. There was no difference noted between the least marked and most marked cases of rickets, in regard to age at which dentition began, nor in regard to muscular development as judged by ability to sit, stand, or walk alone.

R. R. STRUTHERS

A Study of Three Hundred Cases of Pertussis in a Hospital. Herman, C., and Bell, Thos. *Arch. of Paed.*, Jan., 1924.

This report is compiled from the study of a series of cases occurring in the Riverside Hospital for Communicable Diseases, New York. Pertussis is essentially a disease of infancy and early childhood, 73% of the patients being under 6 years of age. The seasonal incidence showed slight variation from month to month as compared with other communicable diseases. The duration of the disease varied from one to seventeen weeks. Respiratory complications occurred in 58%, bronchitis being the principal one. Broncho-pneumonia was present in 14% of cases. The first signs of this were fine resonant râles at the bases of the lungs, or at the angle of the scapula. A few cases showed emphysema of the lungs. Enlarged bronchial lymph nodes and hilus infiltration were common, but the patients showed only the normal percentage of positive Pirquet reactions, and the authors agree with Popesschell that there is no evidence that pertussis predisposes to pulmonary tuberculosis. Of other complications gastroenteritis occurred in 9% and suppurative otitis media in 7%.

The diagnosis is difficult in the early stages. Careful bacteriological studies show the presence of the Bordet bacillus in 75% to 90% during the catarrhal stage, and in 40% during the third and fourth week. After the fourth week it is found in less than 10%. The best method of obtaining it is to have the patient cough into a Petri dish containing a suitable medium. The complement fixation test if positive is of value, but a negative reaction does not exclude pertussis. There were eight deaths in 297 cases; these results were good. The cases were treated in large open wards. The greater number of the deaths were due to broncho-pneumonia; one was due to gastro-enteritis; seven occurred in children under two years of age.

Comparing the home and hospital treatment the authors concluded that the danger of cross infection, especially in infancy, was less if treated at home. This did not hold good in older children. Uncomplicated cases of pertussis should be separated from those with pneumonia. The disease is difficult to control, as it is not always recognized during the early catarrhal stage, when it is most infectious. The treatment should be carried out in the open air, and contrary to the ordinary custom the authors feel that the patients should be kept in bed. Sunlight is beneficial. The patients coughed more on the dull days. Of the drugs, antipyrine combined with bromides seemed to be the most valuable sedatives. They treated four cases with subcutaneous injections of ether, but noted no favourable effects. Pertussis vaccine seemed to have a specific effect in about one quarter of the cases. Its failure in other cases may have been due to several factors; it may have been given too late or in insufficient amounts; or, possibly in some of the cases, the pertussis was not due to the Bordet organism.

S. G. ROSS

Clinical Results Obtained with Bacillus Acidophilus. Kopelaff, N. *Arch. of Int. Med.*, Jan. 15, 1924.

The author reports the clinical results obtained in the treatment of thirty subjects suffering from chronic constipation. He points out that the dosage of bacillus acidophilus preparations is very important. Thus 10 cc. of bacillus acidophilus milk containing 20,000,000 viable organisms per cubic centimeter in the hands of one clinician is unquestionably more desirable than 1,000 cc. containing 10,000 viable organisms per cubic centimeter when administered by another. The transformation of the intestinal flora from the proteolytic to the aciduric type appears to depend on mass inoculation. Therefore it is important to ingest large numbers of viable bacillus acidophilus. The author sometimes gave as much as 1,500 cc. of bacillus acidophilus milk and 400 gms. of lactose daily to one case before alleviating the constipated condition. His criticism of the present commercial preparations is that the number of viable organisms they contain is too small to

yield satisfactory results, when compared with the mass inoculation made by scientific investigators. In his cases he found that the beneficial results of bacillus acidophilus treatment could be prolonged by the use of lactose even after the ingestion of viable organisms had stopped. He is inclined to believe that the lactose furnishes a suitable medium for the development of bacillus acidophilus and thereby perpetuates the transformation of the intestinal flora. The beneficial result may last as long as eleven months following the last ingestion of bacilli, but there is a gradual return of constipation unless treatment is continued.

His summary is as follows:—

(1) A series of 30 constipated subjects were under observation before, during and after treatment with bacillus acidophilus. A comparison of these periods shows that during treatment the number of normal defecations was significantly increased.

(2) The beneficial influence of the bacillus acidophilus usually persists for a considerable period of time after treatment has been stopped. Patients have been observed for from one week to about one year after treatment, and almost without exception all have had more normal defecations after than before treatment.

(3) The use of lactose during and after ingestion of the bacillus acidophilus does much to enhance the beneficial effects.

(4) There is a transformation of the intestinal flora from a proteolytic to an aciduric type as shown by microscopic examination and plate counts.

* * *

In a second article by the same author and Philip Beerman entitled "Studies of the Nature of Bacillus Acidophilus Therapy" they come to the conclusion that bacillus acidophilus therapy is essentially bacteriological rather than chemical in nature.

In order to arrive at this conclusion bacillus acidophilus milk was centrifuged and run through a Mandler diatomaceous filter. Thus the chemical constituents were little altered. When fed to constipated patients it was practically without effect. Regular bacillus acidophilus milk ingested subsequently resulted in an increase of normal defecations.

Again bacillus acidophilus milk was sterilized and lactic acid added thus approximating the original chemical composition of ordinary milk. When fed to constipated patients little change was noted. Regular bacillus acidophilus milk ingested subsequently resulted in an increase in the number of normal defecations.

L. C. MONTGOMERY

SURGERY

The Influence of Radiation Therapy on the Study of Cancer. Ewing, James. *Canad. Pract.*, Vol. xlix, March, 1924, p. 95.

Incidental to the development of radiation therapy of cancer has been the opportunity to study the varying and capricious behaviour of different tumours. In general, the response of a tumour to radiation is inversely proportionate to the stability of its nutrition. Delicate blood vessels and immaturity of cells render the tumour highly susceptible to radiation. As an example of the first, *i.e.*, delicate blood vessels, is cited the lympho-sarcoma, and of the second, the immature cell of embryonal tumours (basal cell carcinoma, embryonal carcinoma of testes and ovary, and many uterine cervical carcinomata).

Sharply contrasted with embryonal tumours is the group of rapidly growing diffuse anaplastic carcinomata derived from adult cells, of which one of the best examples is the inflammatory mammary carcinoma of young and pregnant women. These tumours are not particularly dependent on new blood supply. They are comparatively radio sensitive, probably because of the vulnerability of their numerous mitotic nuclei. Primary results from radiation are often brilliant, but comparatively few permanent cures are obtained.

In all the tumours so far considered radiation seems to act by producing autolytic degeneration by direct effect upon the cells and blood-vessels, without notable damage to normal tissues, hence without scarring. Unfortunately, the majority of malignant tumours are not radio-sensitive. They do not respond by autolysis but require killing or a caustic action. An example is the squamous carcinoma of skin or mucous membrane. No great success has been obtained with this class by radiation except when used as a caustic in the form of needles or tubes inserted into the tumour.

It thus appears, from the varying action of

radiation, that the pathological processes in the two classes of tumours, embryonal and adult, are essentially different.

In a third group of cases the tumour is either so bulky, so inaccessible, or so resistant that radiation therapy must be content with "growth restraint." Examples — mammary and other glandular carcinomata, deep seated tumours, osteogenic sarcoma. High voltage x-ray therapy attacks this group with much confidence but without notable success.

Growth restraint is of definite value in relieving symptoms and prolonging life, and in some instances there may result complete disappearance by a slow process of atrophy and fibrosis. "Restraining the growth of tumours is quite an unsurgical conception, but one which demands close attention in modern cancer therapy." The author follows with a detailed consideration of neuro-sarcoma, osteogenic sarcoma, medullary giant cell tumours and glandular carcinoma. He points out that in the last named the radio resistance is largely because of stroma reaction present.

Tumour metastases are discussed. The effects of radiation therapy demand some modification of established theories as regards the necessity or desirability of block dissections. The wide sterilizing action of gamma rays seems to take care of the area of lymphatic permeation surrounding the initial lesion so that in most cases removal of lymph nodes without block dissection is sufficient. Infection is one of the most important factors in facilitating a spreading metastasis. Inasmuch as radiation aggravates a condition of infection, this must be otherwise suitably controlled.

A study of the natural history of tumours is more possible under radiation therapy than when surgical extirpation has been practised. Radiation therapy has emphasized the importance of the constitutional reaction of the patient in the cure of malignant tumours. This reaction is directly proportional to the general health and may be entirely absent in the cachectic or anaemic.

A. T. BAZIN

Brain Abscess with Pathological Observations. Bagley, Charles, Jr. *Surg. Gynec. and Obstet.*, Jan., 1924. Vol. xxxviii.

The article is founded on twenty cases of brain abscess, seventeen operated on, with forty-seven per cent fatal cases. Autopsies were secured in eight of the eleven fatal cases. The author divides cases into groups according to the avenues of infection. From the tympanic and accessory nasal cavities there are the limiting osteomyelitic changes in the bony walls, then the active dural fibrosis to prevent the extension into the brain cavity; often an extra-dural abscess bulges into the cranial cavity for some time prior to reaching the intracranial cavity. Extension may occur by this form of protrusion into the cranial cavity, or direct from the extradural abscess, or along the blood vessels. A large pedunculated abscess following occipital bone necrosis developed and was removed entire, after four months, with recovery, in a patient age twenty-seven. Chronic intratemporal abscess may exist for years, communicating and discharging periodically through the auditory canal (case of fourteen years' duration). Secondary invasion of the brain along the blood vessels occurs without intradural link. The superior petrosal sinus connects with the tympanic veins and with those of the temporal lobe. Similarly the lateral sinus links up the mastoid cavity and the cerebellar veins. These vascular links account for the unbridged gap found between extradural and intracerebral abscess.

Brain abscesses occur from penetrating objects, *e.g.*, missiles and depressed bone fragments. Some of the abscesses about bullets are quiescent for a long time, and yet when opened show pathological bacteria. A group of abscess cases occurs where injury to the brain is followed by superficial infection, as commonly found in compound fracture of the skull.

The paper shows excellent photographs of the gross brain lesion and micro-photographs of the pathological area. The site of the latter is in every case indicated clearly in the photos of the gross lesion.

The article deals at length with the pathology, and particularly with the pathology of the abscess wall, and its formation from slowly forming proliferating glial tissue, or more rapidly and with denser walls formed from the mesoblastic elements of the blood vessels. The illustrations, thirty in number, including x-ray photographs, are in accord with the high standard of work published from Johns Hopkins.

CHAS. K. P. HENRY

Operation for Acute Empyema on Physiologic Lines. Pickhardt, O. C. *Archives of Surgery*, Jan., 1924, p. 293.

A procedure for drainage in acute suppurative pleurisy, combining the open and the closed methods is described in detail, with a summary of fourteen cases so treated in the service of Dr. Willy Meyer.

Under local anaesthesia a portion of the sixth or seventh rib, four to five inches in length, is resected so as to give full access to the abscess cavity, which is thoroughly cleansed with physiological sodium chloride solution. Careful visual and digital examination of the cavity is made. Permanent dependent intercostal drainage is then established at an appropriate site one intercostal space above the diaphragm, and the drainage tube subsequently led into a large glass bottle half filled with mercuric chloride solution . The primary wound is tightly closed in layers, and negative pressure is striven for by means of the tube and bottle.

The advantages indicated are: (1) A large opening enabling digital and visual examination of the pleural cavity; (2) thorough cleansing with removal of all free fibrinous masses and exudate; (3) the opportunity to pick out the best site for permanent drainage; (4) no need for postoperative dressings for at least a week; (5) the great comfort of the patient, without the usual marked dyspnoea; (6) re-establishment of physiologic conditions in the pleural cavities.

The method is not claimed as a panacea for all acute empyemas, nor that it should be invariably employed. In the author's hands it has justified its expectations. An abstract of discussion is added in which, amongst others Dr. Willy Meyer and Dr. Edward Archibald participated. F. J. TEES

Operations for Rickety Deformity. Drs. Sorrel and Oberthau. *Revue d'Orthopedie*, July, 1923. Vol. x, p. 303.

In reviewing 166 operations, mainly for bow-leg and knock-knee, the writers discuss certain conclusions. Indications:—(1) Operate only when deformity interferes with normal function of the limbs; (2) or when the appearance of the deformity is offensive; (3) and only when the rickety process has finished. Age at which to operate—one should rarely operate before 6 years, by which time the rickets has disappeared as a rule. Broca advises operation not before five to six years, and Grisel gives six to seven years as the earliest age for surgical intervention. Bourdier publishes a case where even at nine years clinical and radiographic signs of rickets were present. In the cases under review the average age was 6½, the oldest 14 years, the youngest 4 years. The most important clinical sign of cessation of rachitic activity is the disappearance of the epiphyseal enlargements, including the rosary, while the x-ray signs are less clearly manifested. Two facts, however, seem clear, (1) as rickets disappears the decalcification at the summit of the diaphysis should be succeeded by an intense calcification; (2) the epiphysis, from being small and round assumes normal size and shape. The x-rays also show where operation should be performed and the postoperative position of the bones.

Knock-knee—Three operations are available. The one most commonly employed is the supracondylar osteotomy of MacEwen, which succeeds admirably in the average case. In extreme cases the cuneiform osteotomy alone gives correct results; while in the rare cases where the knock-knee appears due to an abnormal lowering of the internal condyle the vertical transcondylar osteotomy of Ogston is best. In this operation the internal condyle is separated from the external by a vertical osteotomy descending to the intercondylar notch, allowing the internal condyle to be pushed upwards, relieving the deformity.

In general the writers prefer to do bilateral operations at two sittings about two months apart. Simple osteotomy is done by the chisel, the Albee electric saw is used so far as possible in cuneiform osteotomies, and the skin closed by fine linen or silk allowed to remain in until the removal of the plaster at the end of forty-five days. The writers employ a combined radiographic and orthopedic table by the aid of which the plaster is applied and the bones then examined radiographically to make sure of a correct position. In knock-knee cases the plaster extends from the toes to include the pelvis, by which they say it is alone possible to maintain a proper position in a child.

In cases of bow-legs the authors practice a very carefully planned cuneiform osteotomy of

the tibia, using the electric saw, followed by manual fracture of the fibula. The deformities induced by bow-leg are too complex, they maintain, to be properly corrected by simple fracture.

Rickety deformities of the arms sufficiently grave to demand operation are rare, and as a rule what appear to be such cases are found really to be old fractures with malunion.

J. A. NUTTER

Mobilization of Ankylosed Joints. MacAusland, W. R. *Surg. Gynaec. and Obstet.*, Sep., 1923. Vol. xxxvii, No. 3.

This is a long and elaborate article. The subject of arthroplasty of the elbow joint will alone be abstracted. It is important to ascertain the cause of an ankylosis. Infections, acute or chronic, do not constitute a contraindication to mobilization provided that the process has not been tuberculous or is not active. A tuberculous joint even when ankylosed firmly may retain through life walled-off foci of disease which an operation may stir up to activity. In general, bony ankylosis has been found easier to deal with than the fibrous type. The point at which maximum function is obtained in the elbow is near 90°, and many surgeons advocate it in preference to a mobilized joint. Resection of the joint is usually considered first. Results from this are usually flail-like, weak and unsatisfactory, usually requiring support. Four important points are (1) proper selection of the case; (2) careful preparation for operation; (3) strict adherence to technique, and (4) proper after care. No arthroplastic method should be attempted until 2 years after an infectious process has been quieted down, and until at least 1 year after a traumatic ankylosis. The writer's cases include fractures, infectious arthritis and a few Neisserian joints. Author's technique:—a semicircular flap is turned down. The ulnar nerve is dissected out and set aside. A transverse incision across the joint of the elbow is then made down to and including the periosteum, and the flap is dissected back to be used later. The olecranon is then sawn through and the joint either broken open or sawn through. A portion of the tip of the olecranon is removed, as there is generally too much olecranon, and the lower end of the humerus is shaped, using saw and file, as nearly like the normal outline as possible. The normal olecranon fossa is exaggerated. The ulna and radius are scooped out with a curette. To ensure good function the joint surfaces should fit accurately but not too loosely, only sufficient bone being removed to give free motion. If too much is removed a flail joint follows, giving no advantage over a resection. A fascial flap 5 to 7 inches long by 4 to 5 inches wide is then dissected from the thigh and placed about the newly-fashioned humeral condyles, sutured anteriorly to the joint capsule and posteriorly to the periosteum of the lower end of the shaft. Catgut is wound loosely about the shaft over the transplanted fascia. The olecranon process that remains is fastened by kangaroo tendon to the ulna, the inner and skin flaps sutured and the arm put up in plaster beyond a right angle.

After treatment.—If no evidence of infection, leave plaster on a week, after which it is split and the dressing changed. Passive motions begin in 10 days if normal healing has taken place. The arm is always kept above a right angle. After three weeks, gentle massage, after six weeks, baking three or four times a week. Ultimate success depends largely on after treatment, and patient should be under observation for a long time. Frequent x-rays should be taken to follow the bony changes in the joint. If motion begins to shut down, the arm should be manipulated under ether and the elbow put up in acute flexion .

Occasionally movement becomes limited due to exuberant growth of new bone. This may be removed at a secondary operation, not to be done until at least three months after the original operation. The author reports and illustrates excellent results.

J. A. NUTTER

The Roentgen Ray in the Treatment of Skin Diseases. Fox, Howard, M.D. *Arch. Derm. and Syph.*, Jan., 1924.

This is an exhaustive report of x-ray treatment covering many dermatoses. The writer states that it is the most valuable agent for the treatment of skin diseases. With modern apparatus the Roentgen ray can be accurately measured either directly by pastiles or indirectly by electrical methods. The indirect method is simpler, more accurate and eliminates the personal equation and with proper precautions it can now be safely employed in a routine manner. Its versatility is shown by its favourable

action on neoplasms, inflammatory and functional diseases.

The Roentgen ray is given the first place in value for the local treatment of eczema, seborrheic dermatitis, lichen planus and acne vulgaris. It should be noted that many dermatologists prefer other local treatment in these diseases. The treatment of rosacea with x-ray is less satisfactory and in psoriasis great caution is advised and the method is only to be employed in selected cases. It is of little or no value in lupus erythematosus and is contraindicated in hypertrichosis. It is in ringworm and in favus of the scalp that the most brilliant action is obtained. Sycosis and folliculitis also show good results.

Other valuable uses for this treatment are: as a palliative in anal and vulvar pruritis, to check the progress of mycosis fungoides, and in localized hyperidrosis. In plantar warts it is the method of choice. Alone, or in combination with surgery it is considered valuable for the treatment of keloid and infectious granulomata. It is in the basal-celled epitheliomata that the best results are obtained, when used with curettage. Less common diseases where the x-ray is useful are lichen nitidus and lingua geographica. There are many fine illustrations of the cases taken both before and after treatment.

C. R. BOURNE

Treatment of Acne Vulgaris. Scott, J. A. *Brit. Med. Jour.*, Jan. 26, 1924.

The writer urges early treatment to avoid scarring. He claims rapid and satisfactory results even in his worst cases, from a treatment which, if not new, is well worth bearing in mind. He ensures thorough daily purgation, and finds that rhubarb combined with milk of sulphur appears to have a very beneficial effect in acne. The affected parts should be cleared with a mixture of ether and alcohol, equal parts, then steamed, and the larger comedones extracted. Three warm baths a week are given, containing 15 to 30 grains of zinc sulphate, and the following lotion is used night and morning: milk of sulphur, 2 to 5 drachms; zinc oxide, 2 drachms; powdered camphor 20 grains; powdered tragacanth, ½ drachm; lime water up to 8 fluid ounces. Sulphur soap may also be used. Comedones should be removed from time to time, during the treatment. For the scalp, washing with sulphur soap is generally sufficient, and if necessary, a lotion of mercury perchloride and salicylic acid may be added.

In the late stages, the electro-cautery and ionization or x-rays may be used with advantage.

H. E. MACDERMOT

ANAESTHESIA

A Case of Retention of Urine of 14 Days' Duration following Spinal Anaesthesia with Stovaine (Sopra un caso di ritenzione di urina, consecutiva a richi anestesia stovainica, durata 14 giorni. di Pace, Ignazio. *Il Policlinico*, Dec. 15, 1923.

The patient was a highly neurotic adult male who was operated on for *fistula-in-ano* under stovaine spinal anaesthesia. The puncture was made between the 4th and 5th lumbar vertebrae, no pain being caused. The cerebrospinal fluid escaped drop by drop. None of the fluid could be aspirated into the syringe. There was retention of urine, loss of the power of erection, and the presence of an area of anaesthesia about the coccygeal region for 14 days.

The writer discusses this case exhaustively and gives his reasons for believing that there had been an injury to the cauda equina by the needle. He considers that the failure to obtain cerebrospinal fluid when the syringe was used to aspirate it was due to the point of the needle being in contact with the cauda equina. The injury was to the fibres going to the 1st and 2nd pairs of sacral nerves.

W. B. HOWELL

Sacral (epidural) Anaesthesia (L'Anaesthésie Epidurale Sacrée). Moquot, Pierre. *La Médecine*, Oct., 1923, p. 34.

The writer thinks that this form of anaesthesia, though very little used in France, merits a place among anaesthetic methods. He uses a freshly prepared 2% solution of novocaine with some adrenalin. The injection is made into the lower end of the sacral canal. The right spot for the injection is found by tracing the sacral crest downwards till one comes to two tubercles, more or less prominent, which are situated one on each side of the part of the sacral canal not covered in with bone. It is easy to find the spot in thin people but difficult or even impossible in fat ones. The injec-

tion may be made with the patient on his side, the legs being drawn up against the chest; in the sitting position with the trunk bent forward, or in the knee chest position. The writer prefers the last method. The puncture should be made with a fairly firm needle 6 or 7 c.m. long at a point midway between the two tubercles or a little higher. The skin and ligament covering the sacral canal are pierced at right angles to the skin, the barrel of the syringe is then lowered to an angle of 45° with the skin and the needle pushed gently into the spinal canal for 4 or 5 centimetres. If inserted no further than this there is no danger of penetrating the subdural space.

Immediately after the injection the patient should be put into the recumbent or lithotomy position. Anaesthesia is complete is 8 to 15 minutes. The anaesthetized area includes the anus and lower part of the rectum, the perineum, urethra, bladder and in women the vulva, vagina, and lower part of the uterus. In man the testicle and the cord are not anaesthetic. Anaesthesia lasts three-quarters of an hour. Accidents have occurred from the injection of too large doses of novocaine, possibly into the subdural space. Care must be taken not to make the injection into a vein.

W. B. HOWELL

Fatalities from Anaesthetics. Flemming, A. L. *Brit. Med. Jour.*, Nov. 3, 1923.

Owing to improved anaesthesia the total number of fatalities under anaesthesia in Great Britain has remained almost stationary in recent years in spite of the great increase in the number and severity of the operations. This is due to improved anaesthetic methods. Efforts at further improvement are handicapped by lack of details of coroners' inquests. A large majority of the fatalities is associated with the use of chloroform for induction. In the case of deaths during the course of operation it is often hard to determine the proportion of blame respectively to the surgeon and the anaesthetist. When shock commences to develop during manipulation of the intestine or traction on the mesentery the anaesthetist should warn the surgeon to make pauses for rest. Where too tight packing of the abdomen during operation has led to shock or post-operative distension the surgeon may argue that the packing was rendered necessary by insufficient relaxation, but the anaesthetist may retort that relaxation could have been procured locally by the injection of novocaine more safely than by further saturation of the patient with the toxic anaesthetic. When the blood pressure falls seriously during manipulation it will generally return to normal when manipulation stops, provided it has not been kept low for longer than 15 or 20 minutes.

In the case of deaths resulting from sequelae it is almost impossible to apportion the blame. The anaesthetist should be notified of any untoward symptom which might be due to his administration, otherwise he will have lost what might be a valuable lesson. In the event of chest trouble following operation the surgeon is apt to blame the ether when the real fault lies in tight bandaging or strapping restricting the movements of respiration. W. B. HOWELL

The Relation of Malaria to Altitude.—C. A. Gill (*Indian Journ. of Med. Research*, October, 1923, p. 511) points out that the apparent freedom from malaria of certain parts of the Himalayas in North-West India at heights of 6,000 to 8,000 feet is not to be explained by the scarcity or absence of anophelines nor by unfavourable conditions of temperature, though climatic conditions, especially humidity, may shorten the period of liability to infection. He concludes that the adoption of antimalarial methods, such as the use of mosquito nets in the case of children, may be more necessary in hill stations than has been supposed hitherto. Anopheline mosquitos (A. Willmore), which are malaria carriers, were found to be prevalent in Murree (7,500 feet) from May to September, and infected insects were found to be capable of giving rise to malaria (benign tertian form) in non-immune subjects, but only during the months of July and August, owing to the low relative humidity which ordinarily prevails.—*Brit. Med. Jour.*, Jan. 12, 1924.

Medical Societies

THE QUEBEC SECTION OF THE AMERICAN COLLEGE OF SURGEONS

A special meeting of the Quebec Fellows of the American College of Surgeons was held in the rooms of the Medico-Chirurgical Society, Montreal, on Wednesday evening, February 13th, 1924. Dr. W. W. Chipman, the Chairman of the Quebec Section, was in the chair. The object of this meeting was a twofold one. (1) To acquaint the Fellows of the work already accomplished by the College, and also to inform them of its future plans and policy. Dr. McEachern, the Associate-Director, laid these matters before the Fellows, dealing especially with Hospital Standardization. Dr. Craig, unfortunately, was prevented through illness from being present..

(2) To decide whether or not sectional meetings of the College should be continued in the Province of Quebec. After some discussion, by a practically unanimous vote, the Fellows decided to continue these provincial meetings. There was a consensus of opinion that greater local interest should be manifested in these meetings, and that their programme should be largely representative of our own Canadian work. It was also felt that these sectional meetings should be held, whenever possible, in conjunction with meetings of the Quebec Medical Association.

It was generally agreed that the next sectional meeting should not be held, at least until the autumn of the present year. Such a meeting will be held, probably, in October and in the city of Montreal. Dr. Alfred T. Bazin was appointed Counsellor for the ensuing year. Twenty-six Fellows were present.

(Signed)

E. St. Jacques (Secretary, Quebec Section)

A Simple Procedure for Assisting in the Relief of Constipation.—Dr. H. B. Whitney, of Denver, states that some years ago he saw in a German publication a suggestion for the relief of a certain form of constipation which has proved of value in his experience. The procedure is applicable only to the evacuation of a faecal mass in the lower rectum, hard to remove because of its size or density or both. If the patient sitting in the usual posture at stool presses with the second and third fingers of the left hand on the thin, distended tissues between the coccyx and anus with sufficient force he can bring direct pressure to bear on the mass immediately beneath the tissues, not for the purpose of expelling it, but solely of changing its shape to some extent. As soon as this is accomplished the usual abdominal pressure is quickly effective. The pressure must always be considerable, but the ease and rapidity with which evacuation sometimes follows this change of shape is sometimes marvellous.

Tryparsamid.—A study made by Wade H. Brown and Louise Pearce, New York, of the action of tryparsamid on the animal organism and on experimental infections produced by trypanosomes and spirochetes showed that, although the drug exhibits no unusual parasiticidal effect, it possesses properties of action which peculiarly adapt it to the treatment of trypanosomiasis and to certain classes of syphilitic infections, especially those that call for the use of drugs with high penetrability as well as those that might be influenced favourably by reinforcement of processes of natural resistance. From the practical point of view, the most important features of the action of tryparsamid are: comparative freedom from untoward effects, a moderate degree of trypanocidal action and slight but definite spirocheticidal action, an unusually high penetrability which enables it to develop a high actual as compared with its potential parasiticidal processes of natural resistance and of promoting recuperation. Therefore, the use of the drug should be directed with a view to utilizing these resources and not from the standpoint of a powerful parasiticidal agent.—*Jour. Am. Med. Ass.*, Jan. 5, 1924 .

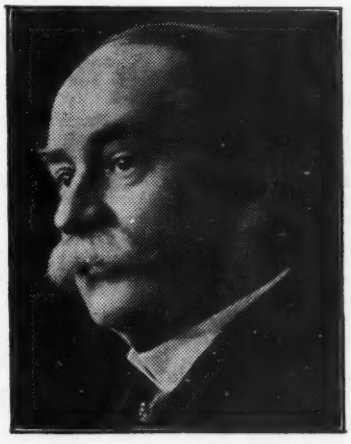
Obituary

CHARLES KIRK CLARKE, M.B., M.D., LL.D.

OBITUARY ADDRESS

BY SIR ROBERT ALEXANDER FALCONER, K.C.M.G.
D.LITT., D.C.L., LL.D.
PRESIDENT, UNIVERSITY OF TORONTO

Charles Kirk Clarke was one of the best men I have known. Take him where you would he was never either on or off his guard against his inner self. That deepest self was so simple, so true, so self-consistent, that it came to the surface like a cool spring welling up from secret depths and lying half hidden under ferns and flowers by the wayside, but with enough trickle to tell the common man or woman, aye, or passing beast of burden, that there he could get a cooling draught for life's dusty journey. He lived and worked for common people, just plain average persons. Of course he was kindly to all, rich or poor, of high estate or lowly; it made no difference to him. And how many of their tragedies he helped to bear. He used great discretion and was reticent, but often a word or two dropped as from the overflow of a full heart, revealed how much of the sorrows and the sins of other people's lives he had taken unto himself. He knew so much that his kind spirit was ready to be gentle when others were harsh; to seek to heal when others would lay on more stripes. In fact he was rarely angry except when he thought that prejudice was working needless injury to some unfortunate person whom surroundings or inheritance had forced into the criminal class; or when official regulations or political exigencies seemed to be blocking measures of relief for the defective in mind or morals. He felt out of the fullness of his knowledge. No man I suppose in the Dominion was such a competent expert as he in mental disease, and nothing was so distressing to him as indifference to the rational and kindly treatment of those suffering from such troubles. So he threw himself into the movement for National Mental Hygiene. Unweariedly he went from province to province, reporting faithfully but not harshly upon conditions and advising as to remedial measures, many of which to his great satisfaction were adopted. He could endure being called a dreamer or a crank, or could run against official self-sufficiency and imperviousness to change, if he saw even small progress might be furthered. And towards the end of his life he was made happy as so much of his dream was realized in the construction of the new psychopathic or reception hospital in Toronto. He felt rewarded I am sure, at the unexpected cordiality with which he was greeted on all sides at the laying of the corner-stone of that building last spring.



CHARLES KIRK CLARKE,
M.B., M.D., LL.D.

Dr. Clarke showed the distinctive characteristics of the old English stock, from which he came,—a sense of justice, of indignation against wrong, but of freedom from vindictiveness. He had an interest in people and their past and accounted for much of the present by inheritance. So he was fond of gathering up local histories, memorials of epochs that have disappeared, old books, and the quaint lore that gives individuality to persons and places. It was a side of his humanism. But only one side. He also delighted in music, and in the beauties of untamed nature where he could watch the birds and other creatures whose ways he knew thoroughly well. In his later life the summer months which he spent at his lake in the northern woods were his time of exhilaration, when out of his joy he created a fund of healthfulness against the trying days of his professional duties.

And thus
Was founded a sure safeguard and defence
Against the weight of meanness, selfish cares,
Coarse manners, vulgar passions, that beat in
On all sides from the ordinary world
In which we traffic.

Dr. Clarke's earlier life history is known to most of you in outline and I need not linger upon it—how he graduated from this University in medicine, was influenced by a great master, Dr. Workman, brought new methods of treatment into the hospital for the Insane at Kingston, and was a pioneer in psychiatry, and soon was recognized as the leading authority in the province on mental disease. Shortly after coming to Toronto, he, with another, was sent by the late Honorable W. J. Hanna to study the methods of dealing with mental disease on the Continent of Europe, and on his return he strongly advocated the establishment of a psychiatric clinic. Mr. Hanna sympathized with Dr. Clarke's outlook and aims, but he was unable to have the clinic built at that time. Unceasingly, however, Dr. Clarke urged that this was the only solution for the treatment of the awful malady, and, as has been already remarked, his declining days were gladdened by the approaching fulfilment of his hopes.

On the retirement of Dr. Reeve in 1908, Dr. Clarke consented to act as Dean of the Faculty of Medicine, though he was much surprised at the offer having been made to him. How well he performed these duties you know. He was no party-man; in fact he often told me that he kept himself aloof from others and was regarded by some as reserved, because he felt it to be his duty to be as fair as possible to all. The students turned to him with implicit confidence; no one was happier than he as he sat among them on Daffydil night; no one could by his banter passing into seriousness so easily win them out of potential trouble; no one had their affection to such a degree.

When he became Superintendent of the Toronto General Hospital his duties as Dean were greatly increased, and to the sufficiently difficult problems of this office were added the perplexing cares that arise daily in the administration of a great hospital. Also the War threw a very heavy extra burden upon him. Most of the staff went overseas; new men had to be brought in constantly; much outside war work was imposed on him, and his sympathy for those overseas was keen. During this period, too, changes had to be made in the faculty of medicine which caused him no

little anxiety, and on the return of our men he began to speak of retiring from the Deanship. He wanted relief both from the office and from the hospital. But this he got only that he might find a wider, if less exacting, sphere in the work of the National Committee for Mental Hygiene covering the provinces of the Dominion. Then came the fitting close of a fine career. Last spring he delivered in London the Maudsley lecture. No one from this side of the water had ever lectured previously on this foundation; and he was received with the greatest kindness by the leaders in Britain of his branch of science. I have read several accounts in English papers of his lecture and of addresses he gave at banquets held in his honour. Modest though he was, and little inclined to talk of his own achievements, he was frankly happy because of his experience in England. But on his features his impending end had begun to leave its mark, and after his return we saw little of him. The wit and humour that had convulsed many a group of friends and that often concealed some earnest shaft of truth, no longer played over and lit up his face as before. He was hiding distress under his placid countenance, and those who knew told us that he could not recover. With clear mind he faced the end; and he would tell his friends that he was glad in having seen so many of his dreams realized; he said little of the faith that was in him, but he had thought in his life upon the things that are true, honourable, just, pure, lovely and of good report, and the spirit of the hymn that he loved was fulfilled, for it was light with him at eventide.

Dr. William Graham Putnam. In the death of Dr. W. G. Putnam, which occurred at Yarmouth on the 14th of February, Nova Scotia has lost one of its best loved physicians. Gold medallist at Pictou Academy in 1883, he graduated in Arts at Dalhousie in 1887, and in Medicine at Edinburgh in 1892, when he took up practice in Yarmouth. He served a term in the town council, was active in politics, prominent in Masonry and Rotary, an elder in the Presbyterian church, talented in music, and much interested in athletics. An exceptionally frank, genial and kindly disposition, and the readiness with which he responded to every appeal for assistance or benevolence, endeared him to every one with whom he came in contact. Several years ago he had a very serious and prolonged illness from which recovery was not expected, but he refused to be discouraged and spent the months during which he was incapacitated from other activities at hard study. Two years ago, another illness developed, and a large section of the bowel was removed because of cancerous involvement. Dr. Putnam was not deceived by the improvement which resulted, but his determination to give useful service to his fellows while life lasted was only increased. Last winter, a trip to the South of France benefitted him greatly, and was followed by three months of intensive study in France, England and Scotland. Soon after his return home, symptoms returned, but he persisted in his work until, about a month before his death, another operation became suddenly imperative. This gave relief, but could not avert the fatal ending.

Dr. Putnam was born at Maitland, Hants County, December 26th, 1866. His father, the late Alfred Putnam, represented Hants County in the House of Commons for many years.

Dr. Elmer John Dickinson, formerly of Roland and Morden, Manitoba, died at Pietermaritzburg, Natal, on February 4th, aged 37.

He graduated in medicine from the University of Manitoba in 1916, and immediately after graduation proceeded overseas. He was attached as medical officer to a squadron of the R.N.A.S., and later to the Motor Machine Gun Brigade. In the battle of Amiens in August, 1918, he won the M.C. and the Croix de Guerre with palm.

After the armistice he returned to Winnipeg where he engaged in practice and held also a position on the teaching staff of the University. Later he proceeded to Cape Town where he was connected with the University of South Africa, and some two years ago settled in practice in Pietermaritzburg. His skill and devotion to duty brought him a large practice and endeared him to his patients. Dr. Dickinson leaves a wife and young son.

Dr. Frederick Coates, well known in the Kew Beach district, Toronto, died on March 9th. Dr. Coates was an active member of the East Toronto Medical Association, and was the first president of the Association.

Dr. George W. Faulkner, of Belleville, died on March 8th, in his 79th year. Dr. Faulkner practised in Sterling for many years, but retired from practice a few years ago and since then resided in Belleville.

Dr. Clarence Brisco, of Chatham, died in London, England, on February 24th.

Dr. W. A. Rothwell, eldest son of the late Benjamin Rothwell of Listowel, died in the General Hospital at Spokane, Washington, on February 12th.

Dr. G. S. Gamble, a well known physician of Brantford, died at the Brantford General Hospital on March 12th.

Preliminary Account of an Investigation of Factors Influencing Longevity. — Raymond Pearl, Baltimore, has analyzed the data obtained from fifty-one men and women from 90 to 105 years of age. The great importance of heredity as a factor in extreme longevity is made perfectly clear, even in fifty cases. Many of the parents and grandparents of these people died at a ripe old age. Of twenty-six men who furnished information on the use of alcohol, fourteen had used it as a beverage during their lives, and twelve had been total abstainers. The mean present age of the users is 97.2 years, and of the non-users, 97.8. Of nineteen women furnishing information on the point, thirteen were total abstainers, with a mean present age of 98.8 years. Six were moderate users, with an average present age of 98.7 years. Of the twenty-six men, six smoked, five chewed, and two both smoked and chewed tobacco. The remaining thirteen have never used tobacco in any form. Of twenty-one women, only one has used tobacco, and she has smoked all her life.—*Jour. Am. Med. Ass.*, Jan. 26, 1924.

Canadian Medical Association
Ontario Medical Association

PROGRAMME

SECTION OF MEDICINE

Wednesday, June 18th—9.30 A.M. to 12.30 P.M.

Thursday, June 19th—9.00 A.M. to 11.00 A.M.

Dr. A. J. Nichols, Halifax—The Roll of the Bone Marrow in Primary Blood Diseases.

Dr. A. H. Gordon, Montreal—Some Respiratory Infections other than Tuberculosis.

Dr. Duncan Graham, Toronto—The Use and Abuse of Iodine in the Treatment of Goitre.

Prof. J. J. R. Macleod, Toronto—Basal Metabolism as an Aid to Diagnosis.

Dr. Wm. Goldie, Toronto—Hypertension Considered from the Standpoint of the Activities of the Vascular System.

Dr. H. A. Dickson, Toronto—The Study of Fungi in Disease of the Skin.

Dr. Harris McPhedran, Toronto—Some Experiences in the Use of Quinidin.

SECTION OF SURGERY

Wednesday, June 18th—

9.30 A.M.—Diagnosis and Treatment of Chronic Ulcers of the Leg, (illustrated).
Dr. R. E. Gaby, Toronto.
Dr. Omar Wilson, Ottawa.

10.10 A.M. Surgical Problems of the Acute Abdomen, (illustrated).
Dr. A. Primrose, Toronto.
Dr. Eugene St. Jacques, Montreal.
Dr. Frederick Mowbray, Hamilton.

11.00 A.M.—Empyaema.
Dr. A. L. Lockwood, Toronto.
Dr. E. W. Archibald, Montreal.
Dr. A. J. Grant, London.

Thursday, June 19th—

9.00 A.M.—Chronic Lesions of the Breast — Symposium.
Dr. Roscoe Graham, Toronto.
Dr. F. Etherington, Kingston.
Dr. A. T. Bazin, Montreal.

9.40 A.M.—Acute Bone Lesions including Compound Fractures.
Dr. Clarence Starr, Toronto.
Dr. George Wilson, Toronto.
Dr. Joseph Murray, Ottawa.

10.30 A.M.—Haematuria.
Sir John Thompson Walker, London, Eng.
Dr. David MacKenzie, Montreal.
Dr. L. J. Austin, Kingston.

SECTION OF EYE, EAR, NOSE AND THROAT

Wednesday, June 18th—9.30 A.M. to 12.30 P.M.

Dr. Gordon Wilson, Chicago—Significance of Vestibular Tests in Intracraneal Lesions.

Dr. C. E. Hill, Toronto—Complications in Cataract Operations.

Dr. J. K. M. Dickie, Ottawa—Some Aspects of Nasal Accessory Sinus Diseases.

N.B.—It is hoped to have Dr. Karl W. Waldron, Minneapolis, and Dr. Septimus Thompson, London.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday, June 18th and Thursday, June 19th—

Dr. McKelvie Bell, New York—Some Aspects of Post-operative Abdominal and Gynaecological Surgery.

Dr. James Millar, Kingston, Chorio-Epithelioma.

Dr. J. O. Polac, New York; Dr. W. W. Chipman, Montreal; Dr. Fred Marlow, Toronto; Dr. Ernest Williams, London; Dr. H. Burgess, Montreal, subjects to be announced later.

There will be a dinner of the Alumni Association of the University of Toronto on Wednesday evening.

The '94 Class of Medicine, University of Toronto, intends holding a reunion; particulars to be announced later.

Members are urged to make their hotel arrangements immediately. Parliament being in Session, accommodation will be taxed to the limit.

Received for publication, April 5th, 1924.

Medical News from the British Empire

GREAT BRITAIN

An arrangement in regard to insurance practice remuneration has now been concluded, after a long period of discussion. A per capita fee of nine shillings has been agreed on, to continue for four years: this is somewhat less than the fee in existence for the last two years, but still, it represents a less drastic reduction than that proposed by the Minister of Health, or the officials of the Approved Societies. It is claimed that "the profession has won its case against the Minister," and has reduced to an absurdity the suggestions and claims of the societies. The latter had suggested a fee as low as seven shillings in some instances, which the Minister would have raised to eight shillings. These offers were rejected, and the feeling of the profession was unmistakably voiced in the many resignations of insurance practitioners. It was demanded that the position of the Approved Societies should be clearly defined as subordinate, and the offer of having the matter referred to a specially constituted Court of Inquiry was accepted. The agreement reached is the result of the deliberations of this Court, which has received reports and evidence of the most exhaustive nature from both sides.

The Senate of the University of Cambridge has accepted an offer from the Board of Trustees of the Rockefeller Foundation to endow the School of Pathology in the University. The Trustees will provide £100,000 for the building of a pathological institute and its general maintenance, and will contribute £33,000 towards endowment, the university undertaking to find a like amount for the completion of the endowment. It is understood that a similar offer has been made to the University of Oxford for the department of biochemistry.

The University of Edinburgh has also received from the Rockefeller Foundation the offer of £50,000 for the building of a clinical laboratory in connection with the Royal Infirmary, and for the completion of the endowment of the professorship of surgery on a full-time basis. A further grant is offered of £1,750 for five years, to meet certain charges in clinical medicine and clinical surgery.

AUSTRALIA

The increase in population during the twelve months ended September 30, 1923, was 2.08%. The number graduating in medicine at Australian Universities in 1922 was larger than usual while fewer practitioners have come from Great Britain and elsewhere. As a result the numbers in the profession have increased by about 8%.

Much attention is being paid to the question of hospital standardization, both by the governments and the medical profession, but as yet no progress has been made toward the introduction of a system similar to that existing in America and Canada.

A protest has been entered by the medical profession against the collection of an import duty on insulin, which drug under the most favourable circumstances is very expensive in the Commonwealth.

In an address to students by Wm. Chisholm, Senior Consulting Surgeon, Sydney Hospital, he refers to a memorial tablet which had been erected in the hospital and has the following words of praise for the late Lieut. Col. John McCrae: "[He] was said to have been one of the most talented men in the medical profession in Canada. He, too, fell a victim to the war and died of a virulent type of pneumonia at Wimereux in January, 1918, shortly after being appointed consultant to one of the English armies in France. He was at the second Battle of Ypres when the Canadians stopped the gap left by the Senegalese, who had given way before the awful gas. Those doctors who were on the staff of the Australian Hospital at Wimereux at that time and saw the distressing condition of the gallant Canadians who were brought there, will readily share his righteous indignation and understand his call to 'Take up the quarrel with the foe,' which appears in the beautiful lines he wrote entitled *In Flanders Fields.*"

Dr. A. A. Lendon, Consulting Surgeon at the Children's Hospital, Adelaide, reports an unusual accident in a girl of seven years during a tonsillectomy. Immediately after excision of the left tonsil it slipped off the blade of the guillotine and fell backwards out of sight. It was searched for but could not be found. The operation was completed and the child allowed to come out of the anaesthetic. Some cyanosis became gradually noticeable and later on when quite awake a complaint was made of difficulty in breathing. This increased, until late in the afternoon it was found that there was obviously obstruction of the right bronchus. In the early evening, just about twelve hours after the operation, violent vomiting took place and the missing tonsil was found in the vomitus. There was an immediate improvement in her colour and her breathing; she slept well and next day seemed none the worse, and when heard from six weeks later no untoward symptoms had occurred.

An investigation of the literature revealed no other similar case reported. On his writing to Dr. Chevalier Jackson of Philadelphia, the latter stated that the case was unique in his own experience. Dr. Jackson said also that there was no mechanical or anatomical reason, however, why it should not occur; in one case he had seen a patient asphyxiated by the aspiration into his trachea of a large oyster, of a size much greater than a tonsil would ever be likely to attain.

It is interesting to note that in a later number of the journal quoted, Dr. Richard Francis, of Sydney, tells of the aspiration of a tonsil into the larynx during operation, in the same way, in a girl of fourteen. In this case, however, there was obstruction immediately, as the tonsil was impacted in the larynx, but it was coughed up on the patient being inverted. Ethyl chloride anaesthesia had been employed, which

accounts for the quick recovery of the patient and her being able to cough.

Gilbert Brown, M.B., Ch.B. (Liverpool), has an article on the value of blood pressure readings as a criterion of safety in anaesthesia. He considers that one may give a fairly exact pre-operative, operative and post-operative diagnosis by this means. He says that if "during an operation the systolic blood pressure falls to 80 mm. or less, and the pulse pressure to 20 or less, with a pulse rate of 100, the operation should be ended as quickly as possible and restorative measures employed. If this circulatory depression continues for more than 20 minutes the patient will probably die within three days." L. C. M.

SOUTH AFRICA

Recent numbers of the South African medical journals have contained details of an interesting medico-legal case. Dr. H. Lewis, of Queenstown, was sued by a patient, Miss Van Wyck, for £2,000 damages, on the ground that he had left a swab in her body when performing an operation on the gallbladder. The operation was done on Feb. 23rd, 1922, and it was alleged by the patient that the swab remained in her body until February 1923, when it was passed *per rectum*. The case was tried without a jury, and the learned judge found that the swab was left in the patient's body at the time of operation. At the same time he did not think that this necessarily meant negligence on the part of the surgeon. The learned judge considered that the whole system in vogue for the checking and counting of swabs during an operation was a reasonable one approved of by many eminent members of the profession. It was to be remembered also that the anaesthetist had testified to having warned Dr. Lewis that the patient's condition was becoming very critical, and that the operation should be finished as soon as possible.

It was clear from the evidence that the operation had been performed with due care and skill, and that the patient had fully recovered—and, in passing, it may be added that the patient admitted never having paid the doctor a penny of his fee (£35). Judgment was given in favour of the defendant.

Referenda have been taken amongst the medical men of South Africa as to the establishment of a new South African Medical Association, or the continued attachment of the various branches to the British Medical Association. The voting on the whole has shown a majority against the formation of a new Association, but there seems to be a strong and growing feeling in favour of a South African Medical Association affiliated to the British Medical Association. Some four years ago a separate South African Medical Association was organized, having its beginning apparently as the result of a report by a committee appointed to investigate the question of contract practice in the Rand mining district. This report favoured the formation of an Association which should have greater powers of collective bargaining than is possible under the constitution of the British Medical Association. The newly formed Association eventually decided to carry on as an entirely separate organization, and circularized the profession for support on the ground that "abuses were growing day by day. Amongst other things the standards of the profession were not being kept up owing to increased numbers of medical men, competition and sweating."

The possibility of two Associations existing in the country is, naturally, viewed with some misgivings by many. One correspondent foresees that it will mean "the establishment of two standards of medical ethics, a higher one fostered by the B.M.A., and a lower one by the S.A.M.A., the latter based entirely or mainly on the Trades Union tradition of as much pay as possible, and the former largely on higher considerations." It is also pointed out that the British Medical Association is by no means so "restriction hampered" in dealing with limitations surrounding private practice, as the supporters of the new organization would make out; and an instance of their powers is quoted in the recent agreement reached in regard to capitation fees under the Insurance Act in Great Britain. The same speaker thought too that the time was "not yet ripe for South Africa to break away from the British Medical Association, and that for some years to come the interests of the medical profession in South Africa will be best served by our present organization."

The Figaro of September 15 prints a modified version of an old fable which has a decided medical flavour and completely alters the moral of the old version:—

Deux pèlerins recontrèrent une huitre.
Et, la désirant tous les deux,
Prirent un juge pour arbitre
Qui goba l'huitre devant eux.
MORALE:
Dieu punit le juge cupide:
Il eut la fièvre typhoide!

News Items

GENERAL

CONFERENCE ON SANITATION AND QUARANTINE METHODS

Dr. Belisario Porras, President of Panama has called a conference of the maritime quarantine authorities of the countries located on the West Coast of South America to convene at Panama, February 25th to 29th inclusive, for the purpose of considering and studying the maritime quarantine problems of the West Coast of South America. The Health Departments of Ecuador, Peru and Chile, the United States Public Health Service and the Pan American Union have been invited to send delegates. It is expected that observers from other countries will also be present. The programme includes formal discussions on matters pertaining to quarantine, practical demonstrations of quarantine methods and demonstration of laboratory methods.

The American Academy of Ophthalmology and Oto-Laryngology is to hold its twenty-ninth annual meeting this year in Montreal, with headquarters at the Mount Royal Hotel. The meeting will take place on three days September 16, 17 and 18. This will be followed by a

two days' intensive course of instruction on the 19th and 20th. This is only the second time the Academy has met in Canada, and should afford an excellent opportunity for our Canadian colleagues to attend the meetings. Canadian specialists, whether members or not, will be made very welcome at the meetings. A very attractive programme has been prepared and an ample opportunity for golf, etc. will be given the members.

Any information regarding membership or the meeting in general will be gladly given by S. Hanford McKee, 158 Crescent St., Montreal, one of the vice-presidents.

The American Climatological and Clinical Association will meet at The Ambassador, Atlantic City, for its annual convention May 1-2-3.

The American Urological Association has also completed arrangements to return to the Ambassador where it met two years ago. This association will spend two days at the shore, June 3 and 4.

MANITOBA

MANITOBA MEDICAL ASSOCIATION

ANNUAL MEETING JUNE 23RD - 25TH, 1924

Arrangements are being made for the annual meeting of the Manitoba Medical Association. As the dates of this meeting are June 23rd, 24th, and 25th, many of the speakers on the programme of the Canadian Medical Association at Ottawa who will be travelling to Vancouver to take part in the meeting of the Pacific North-Western Medical Association will be enabled to take part in the meeting at Winnipeg. The tentative programme includes Sir John Thompson Walker, Senior Urologist, King's College, London; Prof. Lyle Cummins; David Davies, Professor of Tuberculosis, Welsh National School of Medicine; Dr. L. J. Austin, Professor of Surgery, Queen's University; Dr. Geo. S. Young, Associate in Medicine, Toronto University; Dr. F. N. G. Starr, Associate Professor of Clinical Surgery, Toronto University; Dr. Robert E. Wodehouse, Secretary Canadian Tuberculosis Association, and Dr. W. W. Chipman, Professor of Gynaecology, McGill University. It is understood that Sir Jenner Verrall, Senior member of the Council of the Bristol Medical Association and Dr. Alfred Cox, Medical Secretary of the B. M. A. will also be present and will take part.

The place of meeting for the first two days will be the Royal Alexandra Hotel, while on Wednesday morning a clinical programme at the Medical College will be arranged by members of the Medical Faculty of the University of Manitoba, and the afternoon will be given to golf.

NOVA SCOTIA

The new general hospital at New Waterford was officially opened with appropriate ceremony on the twenty-ninth of February.

Dr. W. E. Daley, of Halifax, recently met with a very regrettable accident in which a fragment of glass from the windshield of his motor car penetrated an eye, necessitating the removal of the organ.

The annual dinner of the Halifax Branch of the McGill Graduates' Society was held at the Halifax Hotel on the evening of February 28th, with Dr. W. L. Muir presiding. There was a good attendance of alumni and alumnae, all of whom enjoyed the function thoroughly.

A summary of the vital statistics for Nova Scotia for the month of October 1923, indicates a general death rate for the month of approximately 11.5, a tuberculosis death rate of approximately 103, and an infant mortality rate of 91.5. Death from infectious diseases, including pneumonia and tuberculosis, number 89 as compared with 113 in October, 1922.

The March meeting of the Osler Medical History Club was held at the residence of Dr. K. A. McKenzie, when, as is the custom of the club, the host read the paper of the evening. Dr. McKenzie chose as his subject "Chronologia Cordis," and traced in an exceedingly interesting way, the development of our knowledge of the heart and circulation.

A reunion of Dalhousie alumni and alumnae has been planned for the coming summer, the dates having been tentatively set for August 12th to 14th. A very interesting programme has been laid down, including a bit of pageantry which will undoubtedly prove most attractive. The Committee which has the matter in hand is representative of various University interests, and its personnel is such as to insure thorough enjoyment to all who may come to participate in the reunion.

The Halifax Medical Society met on the twentieth of February to hear a paper on the acute abdomen, by Dr. W .N. Rehfuss, of Bridgewater. Dr. Rehfuss classified acute abdominal conditions as being either inflammatory, perforative or obstructive, and cited a number of cases illustrative of these various types. At the meeting of March fifth, the speaker was Professor E. Gordon Young, who dealt with the relation of biochemistry to modern medicine. Dr. Young traced the history of biochemistry, and showed how intimately it has become associated with the work of the clinician. The papers of both Dr. Rehfuss and Dr. Young were admirably presented and led to most interesting discussions.

Various circumstances have combined to make it appear undesirable to undertake this year the summer school of medicine, to which reference was made in the *Journal* some months ago. A "refresher" course for graduates, lasting for two weeks, will be given, probably beginning about the last of August. To this, graduates of any medical school will be welcomed. The idea of a summer school has not been abandoned, and it is hoped that it may be possible to establish this in 1925.

The reports of the Provincial Health Officer, covering the work of the department in respect of the public health, and the inspection of humane and penal institutions for the year ended September 30, 1923, were recently presented to the Legislature. As these are the first reports submitted by Dr. Jost, they have been anticipated with unusual interest, and they show, as was confidently expected, the result of the zeal, industry and thoroughness for which he is well known.

The health report indicates continued decline in the tuberculosis rate and the infant mortality rate, while the general death rate was almost as low as in the previous year, when it was the lowest ever recorded. Analysis of the statistical returns for several years shows a fairly consistent increase in the mortality from cancer. Reference is made to the work initiated some years ago in the endeavour to combat venereal diseases, and a materially lessened incidence of venereal infections is noted. A large number of specimens were examined in the laboratory, the present accommodation of which is so greatly taxed that a very considerable enlargement is planned. In his report on humane institutions, Dr. Jost makes the statement that every local hospital in the province except those which do not come under inspection on account of their small size, has been approved by the committee on hospital standardization of the American College of Surgeons. The work of the three provincial institutions, the Nova Scotia Hospital for the Insane, the Victoria General Hospital, and the Nova Scotia Sanatorium, and that of the Grace Maternity Hospital, is spoken of in most commendatory terms. Of several of the county asylums, and of several gaols, however, the reports are not favourable, and the abolition of the system of county care of the chronic insane is advocated.

On the 24th of January, the people of Annapolis Royal, where the first settlement was made by Europeans in what is now Canada, mustered in great force to do honour to Dr. Augustus Robinson. Dr. Robinson was born at Annapolis Royal more than 88 years ago, but after more than 67 years of hard, active practice he is still young and carrying on with such vigour, enthusiasm and real *joie de vivre* as to fully warrant the pride and affectionate esteem in which his fellow townsmen hold him. Graduating at the University of Pennsylvania in 1857, Dr. Robinson subsequently gained the M. R. C. S., England, and the L. S. A., London, and has always remained an alert, diligent student. He has seven times been Mayor of his home town, and is still a leader in many of the activities of the citizens. On the occasion of the reception, it was suggested that those whose arrival in the world had first been witnessed by Dr. Robinson should stand, and more than half responded to the suggestion. Whereupon Dr. Robinson, with characteristic wit, congratulated them on having grown so much since he first became acquainted with them. A feature of the ceremony was the presentation of a substantial purse of gold, which the doctor stated would be used in the purchase of some article which would be treasured by his family as a mark of the kindness and generosity of his friends.

In the month of February, the nurses and visiting housekeepers of the Massachusetts-Halifax Health Commission paid 4,259 visits in Halifax and Dartmouth. The attendance of children at the nutrition class and the morning health class reached a grand total of 564. There was an attendance of 97 at the pre-school age dental clinic for prophylactic and reparative work and instruction in the care and feeding of the teeth. Nose and throat operations to the number of 13 were performed during the month. The Eye Clinic, a special clinic under Dr. S. H. Keshen, enrolled 39 during the month of February. The tuberculosis examiner and his assistant made 82 chest examinations in February, of which 35 were at the Health Centre, while 16 were in consultation with 11 practitioners. The Commission's laboratory assistant, who has been in active work for two months, made a large number of various tests, and was consulted by five practitioners.

A suggestion for the diagnostician in distress is contained in the following excerpt from a news item relative to a disabled steamer which was recently towed into Halifax Harbour: "Only one passenger is aboard the Poland. This passenger is a woman belonging to New York, who is on her way to Europe. It is understood that she is suffering from illness brought on by her rough experience. A survey was held yesterday and a diver will go down this morning to learn if her sternpost or rudder is damaged."

NEW BRUNSWICK

Drs. G. A. B. Addy and W. E. Rowley of St. John have spent the last month in the Southern States enjoying a well earned rest from the multitudinous worries inseparable from the practice of medicine.

The medical profession of St. John has always shown an interest in the affairs of the country and at present four practicing physicians are absent attending to their legislative duties: Senator Daniel and Dr. Murray MacLaren, C.M.G. are at Ottawa and Dr. Curren and Hon. W. F. Roberts, Minister of Health, are in attendance at the Provincial Legislature in Fredericton.

An article in a weekly paper recently drew the attention of the public to a case wherein, after the death of a patient in the General Public Hospital the attending physician submitted an exorbitant bill for services rendered while the deceased was a free patient. The item has caused much unfavorable criticism amongst the profession and the doctor concerned is to be given the opportunity of explaining the matter to the Board of Commissioners of the Hospital.

At its monthly meeting the staff of the St. John Infirmary recommended that chiropractors be prohibited from attending patients in that institution eithers as masseurs or electrotherapists, or under any other guise. One of the staff has introduced an advertising chiropractor ostensibly to work under his direction and the object of the resolution was to prevent such combinations which while no doubt profitable to the doctors (!) was of doubtful benefit to the patients.

The question of fee-splitting may soon have to be considered in one of the St. John standardized hospitals but as with chiropractors it is difficult to secure absolute proof of the alleged financial dealings. The doctor concerned in these unethical proceedings has signed the promise to abide by the rules of standardization and if there be any truth in the rumours re division of fees, it is hoped that he will realize the importance of keeping his pledge and will in future observe the spirit as well as the letter of the law.

It is too bad that we have not any means of disciplining those of the profession who split fees, encourage chiropractors, and are unethical in their charges and general intercourse with the public. We are far too easy going. In no other organization would a member be allowed to flout the rules with impunity. Such men usually play a lone game and are immune to

professional ostracism. The only way to impress them is through the pocketbook and how to do that effectively is not apparent.

The annual meeting of the New Brunswick Medical Society will be held in St. John during July. Owing to the difficulty of arranging dates agreeable to the prospective speakers the exact days have not yet been decided upon. Dr. Routley the Secretary of the Canadian Medical Association will be present and it is hoped will be able to put the finishing touches on the reorganization of the profession which is now in progress in N. B. The advantages of organization are many and apparent to all but there is a feeling of "Let George do it" that must be combatted and overcome before we have an efficient medical society. The forming of sectional societies is well under way and when the physicians see how it will profit each of them individually to belong to a live and active medical association, there should be no difficulty in securing their support for a regional branch of the provincial society. Dr. Routley has already been very kind in his suggestions and advice and we appreciate his offer to come to St. John at our convenience to help the work of re-establishing our Medical Society.

E.J.R.

QUEBEC

Dr. A. Bercovitch, formerly of Winnipeg, has opened up an office building in the Medical Arts Building, Montreal.

Dr. Albert Brosseau, has entered upon his duties as Superintendent of the Saint Michel Archangel Hospital, Quebec.

Dr. Arthur Rousseau, was recently a guest of honour at a banquet held at the Windsor Hotel, given by the final students of the University of Montreal.

A meeting was held in the Circle Universitaire, to organize that part of the programme for which Montreal is responsible at the Congress of the French Canadian Doctors of North America. It meets in September next at Quebec.

At a meeting of the Board of Governors of the Montreal General Hospital the offer recently made to the Quebec Government to carry on a campaign against tuberculosis was unanimously approved.

The new Pathological Building at McGill University has appropriately attracted to itself the owl, from ancient times regarded as the symbol of wisdom. A few days ago, workmen found a live grey owl in a room behind the doorway. He is now in a cage and is likely to be the mascot of the building for many years.

Hospital Treated Many Children. More than 30,000 children have been treated in Ste. Justine Hospital during the year, according to the reports submitted at the annual meeting. The financial report for the year showed a small debit balance owing to the construction of a new wing in November, 1922. There have only been 180 deaths and many of these occurred within one or two days after admission. Assiduous research has been carried on in the new laboratory, under the supervision of Dr. Edmond Dube.

To provide temporary hospital accommodation for English speaking Catholics in Montreal, the Hospitalier Sisters of the Hotel Dieu will take over shortly Baron Shaughnessy's residence on Dorchester Street, which has been offered to them by Lady Shaughnessy for this purpose. Several months ago it was announced that the first hospital for English speaking Catholics in Montreal —the St. Mary's Memorial Hospital—would be built at a cost of $1,000,000. As explained by the Honorary Secretary, the objective is not quite reached; it is planned to open the temporary headquarters as outlined.

The Annual Meeting of the Montreal Convalescent Home, was held recently and the new officers elected. The Secretary's report stated that 287 patients have been admitted during the year, 170 of that number receiving free care. These comprised thirteen different nationalities, of which 139 were English speaking Canadians. There were 148 Catholics and 134 Protestants; 106 patients were accepted by the Public Charities Department and 30 cents a day paid towards their maintenance. The Act, however, does not provide for immigrants who frequently receive hospital and convalescent treatment soon after their arrival in the country. The Treasurer's report shows a balance of over $2,750.00 to be carried to capital account.

It was announced recently that Lady Strathcona and Mount Royal has made a donation of $120,000 to provide a permanent endowment for the Department of Zoology of McGill University. For a number of years previous to his death Lord Strathcona, then Chancellor of the University, provided a considerable sum annually towards the upkeep of what has since been known as the Strathcona Chair of Zoology. The subject of Zoology was first taught by Sir William Dawson, and later by Dr. E. W. MacBride, who is now at the Imperial College of Science and Technology, London. Dr. MacBride was succeeded in 1909 by Dr. Arthur Willey, the present holder of the chair.

The vision of a large epileptic colony farm situated near Montreal, with a wide expanse of health-giving acres, adequate equipment and several hundred happy patients, was invoked at the annual meeting of the Montreal Industrial Institute for Epileptics by its president, Dr. A. G. Morphy. A fact which was emphasized several times in the addresses was, that the work of the institute had been very successful, so far as it has gone, but that there is a crying need for an institutional home to reinforce the necessarily meagre work of the school. Dr. Morphy stated that epileptics are turned away from ordinary schools here, although no other provision has been made for them, and this was a powerful reason why a custodian home should be built to give real effect to much of the work done in the school. He understood that the provincial Government has the building of a farm colony under consideration and he expressed the hope that the Government will shortly extend its progressive public policy into this field of work. It was remarked at the meeting that the work of the patients usually made such institutions almost self-supporting The financial report, given by Mr. J. Dinham Molson, the honorary treasurer, showed receipts of $2,222.00 and a surplus for the year of $66.00.

ONTARIO

Dr. Frank H. Boone, has commenced practice in Hamilton, and purposes limiting his practice only to consultation work in the department of diseases of children, a subject to which he has devoted special study in the hospitals of England, France and Germany.

On January 18th, Dr. J. K. McGregor of Hamilton addressed the Orillia Medical Society on "The Treatment, Surgical and Non-Surgical, of Goitre."

On January 19th, the Sault Ste. Marie Medical Society received an address from Dr. W. R. Campbell of Toronto on "Methods for the Study of Renal Function and their Value in the Diagnosis of Renal Disease."

The Thunder Bay Medical Society met at Port Arthur on January 19th, and listened to an address given by Dr. Wm. Goldie on "The Interpretation of the Signs and Symptoms of Chronic Gastro-Intestinal Disease."

Dr. W. E. Ogden of Toronto addressed the Lincoln County Medical Society on January 22nd, taking as his subject, "The Differential Diagnosis of Tuberculous and Non-Tuberculous Diseases of the Chest."

A meeting of the South Waterloo Medical Society was held at Galt on January 24th, at which an address was given by Dr. K. C. McIlwraith of Toronto on "Modern Views of the Conduct of Labour."

On February 1st, Dr. Roscoe Graham addressed the St. Thomas Medical Society on "The Importance of the History and Clinical Examination in Acute Abdominal Conditions."

The Kent County Medical Society held a meeting at Chatham on February 7th, the following addresses were given:— "Hypertension and its Relation to Vascular Function," by Dr. Wm. Goldie; "A Clinical Study of Tumours of the Breast," by Dr. A. Primrose.

Dr. George S. Young of Toronto addressed the Sudbury Medical Society on January 24th on "Psychotherapy from the Standpoint of the General Practitioner."

The North Waterloo Medical Society met at Kitchener on February 1st; Dr. E. E. King of Toronto gave an address on "The Non-Surgical Treatment of Enlarged Prostate."

Dr. Geo. E. Wilson of Toronto addressed the Barrie Medical Society on February 6th, on "The Treatment of Fractures."

At a meeting of the Oxford County Medical Society on February 6th, an address was given by Dr. V. E. Henderson on "The Modern Conception of the Use of Drugs."

On February 28th, Dr. Geo. E. Wilson of Toronto addressed the Niagara Falls Medical Society on "The Treatment of Fractures."

The York County Medical Society held a meeting at Richmond Hill on February 14th, at which an address was given by Dr. Geo. S. Strathy, on "The Differential Diagnosis of Pain in the Back."

On March 7th, the Essex County Medical Society met at the Windsor Club, Windsor; two sessions were held; one from four o'clock until six, and the other from nine o'clock until eleven. At this session J. J. R. Macleod of Toronto gave an address the "Circulation."

Dr. H. K. Detweiler of Toronto addressed the Thunder Bay Medical Society at Port Arthur on February 16th, on "Asthma and Hay Fever."

Dr. C. S. Wright of Toronto addressed the Brant County Medical Society on February 14th, on "Some Explanations of Low Back Pain with a Consideration of Sacro Lumbar and Sacro Iliac Lesions."

On February 16th, the Sault Ste. Marie Medical Society was addressed by Dr. Alan Brown on "The Diagnosis and Treatment of the Pneumonias of Childhood."

The Orillia Medical Society met on February 18th, and listened to an address given by Dr. Geo. S. Strathy on "High Blood Pressure and Arteriosclerosis."

Dr. J. J. R. Macleod of Toronto addressed the Welland County Medical Society on February 19th, on "Recent Work on the Ductless Glands."

On February 19th, the North Bay Medical Society were addressed by Dr. F. B. Mowbray of Hamilton on "The Technique and Application of Local Anaesthesia."

A new hospital will be erected at Clarksburg in the Beaver Valley district, as a memorial to the Beaver Valley men who fell in the Great War. It will be known as the Thornbury-Clarksburg Memorial Hospital. Mr. Harry Pether, Mr. T. G. Imrie, and Mr. Amos Ventner have promised to furnish a ward. The building and maintenance cost will be met by volunteer contributors.

On March 6th, the Stratford Medical Society received an address from Dr. Chas. H. Gilmour on "Considerations regarding the Surgical Treatment of Malpositions of the Uterus."

The St. Thomas Medical Society met on March 7th, an address was given by Dr. W. H. Dickson of Toronto on "The Diagnosis of Conditions of Gastro-Intestinal Tract and of Gall-Bladder by the Use of x-ray."

The fifth annual report of the Harvey Club of London, Ontario, was held on February the 22nd. An entertaining evening was spent during which President McIntosh and other members of the Club addressed the meeting.

The Lincoln County Medical Society met at St. Catharines on February 26th, an address was given by Dr. D. E. Robertson on "Acute Abdominal Conditions in Children."

The North Waterloo Medical Society met at Kitchener on February 29th, Dr. W. R. Jaffrey of Hamilton gave an address on "Common Skin Affections."

BRITISH COLUMBIA

At a recent meeting of the Vancouver Medical Association, Dr. R. H. Mullin, Director of Laboratories of the Vancouver General Hospital, read a paper on "Recent Advances in the Control of Diphtheria." He gave his experiences with the virulence test, particularly in relation to the release or detention of carriers, and spoke at length concerning the valuable work done by Bie of Copenhagen in reduction of the mortality by using a massive dose of anti-serum, both intravenously and intramuscularly.

Preparations for the forthcoming Session of the Pacific Northwest Medical Association to be held in Vancouver on June 26-27-28 are well under way. In view of the excellent programme which will be offered a record attendance is expected at that meeting. Indeed, one of the difficulties which the Committee in charge will have to meet, will be the question of hotel accommodation, as with other Conventions in Session, and the approaching visit of the British Fleet, such accommodation in the city will be severely taxed. Any of your readers contemplating attendance at this meeting would be well advised to make early reservations.

Dr. W. A. Clarke, until recently Assistant Unit Medical Director for B. C. in the Dept. of Soldiers' Civil Re-Establishment, now of New Westminster, recently underwent an operation in the Vancouver General Hospital.

Arrangements have been made by the University of Manitoba to hold the final examinations for students of the Medical Faculty acting as Internes in the Vancouver General Hospital, in Vancouver in April.

The city has recently been "honoured" by a visit from Dr. B. J. Palmer, of Chiropractic fame, who has addressed meetings in Vancouver, and we are given to expect a return visit from Dr. Price, whose Spiritual Healing Campaign recently attracted so much attention (and the final reports of his "end results" unfortunately less.)

The monthly luncheons of the B. C. Medical Association have been a great success, as shown by the increasing attendance, and by the number of men coming to them from surrounding districts. The next luncheon will be held on March 14th, when President L. S. Klinck of the University of British Columbia will speak on "Some Aspects of University Policy."

In a bulletin which has just been issued, it is suggested that an attempt be made by local branches of the Association to hold similar luncheons in the larger towns, where men of importance and standing in the community, might be invited to meet the medical profession and give them short addresses. In this way the representatives in parliament of the constituency, leaders in education, community life, religion and so on, might be approached and a friendly feeling established and maintained.

A meeting of the Executive Committee of the B.C. Medical Association will be held on the 14th of March at which a number of important subjects will be taken up for disposal, after which, a further bulletin will be sent to all members.

Perhaps the most important matter under the consideration of the B. C. Medical Association at present, is "Health Insurance," and whilst of course, no definite steps have been, or can be taken, work is proceeding and progress is being made. A committee has been appointed to consider how best to obtain the views of other organizations on this subject. This committee contemplates inviting members of labour and other organizations to a conference when the whole matter will be discussed.

The continued interest shown by members of the B. C. Medical Association is most gratifying to its Executive. The personal visits of the Executive Secretary, who explains in detail the many activities of the Association, appear to be much appreciated, and the fact that membership fees for the current year are coming in much more promptly than last year, proves that the Association is "neither dead nor sleeping."

Book Reviews

We have received a copy of the Proceedings of the Seventeenth Annual Meeting of the Association of Life Insurance Presidents, held in New York, December 6th and 7th, 1923. There are two communications of medical interest. The first on "Blood Pressure, What Affects It" is by the Chief Actuary of the New York Life Insurance Company. From data obtained from the records of various insurance companies, tables are presented showing the effects of high and low pressure upon mortality rates, the variations in pressure with age, build and nationality. He is led to believe from racial studies that a better adjusted diet among the general population, with less animal food would result in a lower blood pressure and in greater longevity with an equal ability to carry on their occupations. In the paper on Insulin in its relation to diabetes, it is pointed out that diabetes is on the increase, and that with insulin available as a means of keeping diabetics alive, there will be a considerably larger proportion of diabetics in the population than heretofore. The following problems as a sequence of the availability of insulin demand consideration: (1) the fraudulent use of insulin to cover diabetes and thus secure insurance; (2) health conservation work among policy holders who are found to have diabetes; (3) the question of substandard insurance on diabetics. J. H. E.

Geriatrics—A treatise on the prevention and treatment of diseases of old age and the care of the aged. By Malford W. Thewlis, M.D. Second edition. 401 pages, 6 x 9 inches. Price $4.50. St. Louis, C. V. Mosby Company, 1924.

There has been some revision of the text and several chapters have been added. The author believes geriatrics to be as important a branch of medicine as is pediatrics and urges that more attention be paid to the special conditions arising after fifty. There is much in the work that is helpful, but it does not appear well balanced.

The author's belief in the internal secretions of various organs leads him to extol the virtues of hepatic extract, renal extract, prostatic extract, gastric extract, myocardial extract and numerous others. Lung substance for example, is advised in abscess of the lung, empyema, suppurative hydatid cysts, and in tuberculosis; brain substance in functional nervous diseases and senile dementia. Opotherapy he believes to be a most valuable weapon in combating disease conditions and in preventing many senile degenerations. J. H. E.

Ephraim McDowell—Father of Ovariotomy and Founder of Abdominal Surgery. By August Schachner, M.D., F.A.C.S. 331 pages. Published by J. B. Lippincott Company, 201 Unity Building, Montreal.

This book details in a very graphic way the story of the first ovariotomy performed by McDowell and throws many interesting lights upon the life of the man who, under circumstances decidedly adverse, had the courage of his convictions, and the mechanical ingenuity and surgical ability which enabled him to successfully carry through an abdominal operation of great magnitude. While the whole book is readable and instructive, there is a considerable portion dealing with local geographical, historical, and other phases which are more of local and personal than of general interest. Although it is generally conceded that McDowell's operation was the first of its kind, there is still some doubt as to this, but the evidence in McDowell's favour is emphasized by the author. In designating him the "father of ovariotomy" it should be remembered that it appears clear that similar operations had been performed by others before the details of his were published. General abdominal surgery had as its forerunner gynaecology, and gynaecologists were beyond doubt the founders of modern abdominal surgery. It is doubtful, however, if the author is quite justified in referring to McDowell as "the founder of abdominal surgery." He did his part but that was undoubtedly exceeded by others such as Lawson Tait.

F. W. M.

Lawson Tait, His Life and Work—By W. J. Stewart McKay, M.B., M.Ch., B.Sc. 579 pages, 34 plates. Price 25s. Published by Bailliere, Tindall and Cox, London.

This book is written by one who had personal contact with Lawson Tait and who, therefore, speaks with authority. Consideration of the numerous references supplied by the author clearly shows that a vast amount of time must have been spent by him in seeking and selecting his material. The book is most interesting from cover to cover, and can be read with great interest, profit and enjoyment by anyone who is interested in the development and progress of modern abdominal surgery. Not only is Tait's relation to this subject clearly set forth, but his relation to other masters of surgery and their work is made obvious. We know of no other work that affords such a good picture of the development of modern abdominal surgery and of the part taken by Tait and by other surgeons whose names rank high in historical memoirs. The story of the introduction of antisepsis and asepsis is well presented, as is also the introduction of the ligature and many other minor surgical measures which now seem so simple and so obvious, but which in those pioneer days provided material for much discussion, sometimes very bitter. Surgeons cannot afford to miss an opportunity of reading and studying this illuminating book, and physicians would be well advised to read it so that they might more readily appreciate the problems which their confrères have been called upon to solve.

F. W. M.